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National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins; Pesticide Active Ingredient Production; and Polyether Polyols Production; Final Rule

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 63**

[EPA-HQ-OAR-2011-0435; FRL-9906-34-OA]

RIN 2060-AR02

National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins; Pesticide Active Ingredient Production; and Polyether Polyols Production**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: This action finalizes the residual risk and technology review conducted for nine source categories regulated under the National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins; Pesticide Active Ingredient Production; and Polyether Polyols Production. Today's action promulgates amendments concerning the following: Residual risk reviews; technology reviews; emissions during periods of startup, shutdown and malfunction; standards for previously unregulated hazardous air pollutant emission sources; revisions to require monitoring of pressure relief devices that release to the atmosphere; and electronic reporting of performance test results. This action also lifts the stay of requirements for process contact cooling towers at existing sources in one Group IV Polymers and Resins subcategory, issued on February 23, 2001. The revisions to the final rules maintain the level of environmental protection or emissions control on sources regulated by these rules.

DATES: This final action is effective on March 27, 2014. The incorporation by reference of certain publications listed in this final rule was approved by the Director of the Federal Register as of March 27, 2014.

ADDRESSES: The EPA has established a docket for this rulemaking under Docket ID No. EPA-HQ-OAR-2011-0435. All documents in the docket are listed in the <http://www.regulations.gov/index>.

Although listed in the index, 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. Publicly available docket materials are available either electronically in <http://>

www.regulations.gov or in hard copy at the EPA Docket Center, William Jefferson Clinton (WJC) West Building, Room 3334, 1301 Constitution Ave. 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 these final rule amendments, contact Mr. Nick Parsons, Sector Policies and Programs Division (E143-01), Office of Air Quality Planning and Standards (OAQPS), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5372; fax number: (919) 541-0246; email address: parsons.nick@epa.gov. For specific information regarding the risk modeling methodology, contact Ms. Darcie Smith, Health and Environmental Impacts Division (C159-02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-2076; fax number: (919) 541-0840; email address: smith.darcie@epa.gov. For information about the applicability of these three NESHAP to a particular entity, contact Ms. Tavera Culpepper, Office of Enforcement and Compliance Assurance (OECA), U.S. Environmental Protection Agency, Washington, DC 20004; telephone number: (202) 564-0902; email address: culpepper.tavera@epa.gov.

SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. Several acronyms and terms used to describe industrial processes, data inventories and risk modeling are included in this final action. While this may not be an exhaustive list, to ease the reading of this preamble and for reference purposes, the following terms and acronyms are defined here:

ABS Acrylonitrile Butadiene Styrene
AWP alternative work practice
BAAQMD Bay Area Air Quality Management District
CAA Clean Air Act
CBI confidential business information
CDX Central Data Exchange
CEDRI Compliance and Emissions Data Reporting Interface
CFR Code of Federal Regulations
EPA Environmental Protection Agency
ERT Electronic Reporting Tool
FR Federal Register
HAP hazardous air pollutants
HI hazard index
HON National Emission Standards for Organic Hazardous Air Pollutants From the

Synthetic Organic Chemical Manufacturing Industry
HQ hazard quotient
ICR Information Collection Request
LDAR leak detection and repair
MABS Methyl Methacrylate Acrylonitrile Butadiene Styrene
MACT maximum achievable control technology
MACT Code Code within the NEI used to identify processes included in a source category
MBS Methyl Methacrylate Butadiene Styrene
MIR maximum individual risk
NAICS North American Industry Classification System
NEI National Emissions Inventory
NESHAP National Emission Standards for Hazardous Air Pollutants
NRDC Natural Resources Defense Council
NTTAA National Technology Transfer and Advancement Act
OAQPS Office of Air Quality Planning and Standards
OECA Office of Enforcement and Compliance Assurance
OGI optical gas imaging
OMB Office of Management and Budget
P&R IV Group IV Polymers and Resins
PAI Pesticide Active Ingredient
PCCT process contact cooling tower
PEPO Polyether Polyols
PET Poly (Ethylene Terephthalate)
ppm parts per million
PRD pressure relief device
PS Polystyrene
RFA Regulatory Flexibility Act
RTR residual risk and technology review
SAN Styrene Acrylonitrile
SOCMI Synthetic Organic Chemical Manufacturing Industry
SSM startup, shutdown and malfunction
TPA Terephthalic Acid
tpy tons per year
TIN Technology Transfer Network
UMRA Unfunded Mandates Reform Act
VOC volatile organic compounds

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A red-line version of the regulatory language that incorporates the final changes in this action is available in the docket for this action (EPA-HQ-OAR-2011-0435).

I. General Information

A. Executive Summary

1. Purpose of the Regulatory Action

On January 9, 2012 (77 FR 1268), the EPA proposed amendments to three national emission standards for hazardous air pollutants (NESHAP): Group IV Polymers and Resins (P&R IV); Pesticide Active Ingredient Production (PAI); and Polyether Polyols Production (PEPO). This action presents the results and final decisions based on the EPA's review of these three NESHAP. Specifically, pursuant to the Clean Air Act (CAA), the EPA has completed residual risk and technology reviews (RTRs) for nine source categories covered by three separate regulations. Significant public comments and our responses are summarized in this preamble. A summary of the public comments on the proposal not presented in the preamble, and the EPA's responses to those comments, is available in the docket for this action (EPA-HQ-OAR-2011-0435).

Section 112(d)(6) of the CAA requires the EPA to review these regulations (i.e., NESHAP) and revise them as necessary (taking into account developments in practices, processes and control technologies) no less frequently than every 8 years. Section 112(f)(2) of the CAA requires the EPA to assess the remaining risks due to emissions of hazardous air pollutants (HAP) from these source categories and determine whether the emission standards provide an ample margin of safety to protect public health within 8 years of promulgation of the original standards.

The amendments also address the following: Emissions during periods of startup, shutdown and malfunction; standards for previously unregulated HAP emission sources; revisions to require monitoring of pressure relief devices in organic HAP service that release to the atmosphere; and electronic reporting of performance test results. This action also lifts the stay of requirements for process contact cooling towers at existing sources in one P&R IV subcategory issued on February 23, 2001 (66 FR 11233).

2. Summary of Major Provisions

The EPA has determined that no rule amendments are needed for these three NESHAP based on the RTRs under CAA sections 112(d)(6) and 112(f)(2). However, the EPA is making revisions to all three NESHAP in three areas. First, the EPA is eliminating the exemption for periods of startup, shutdown and malfunction (SSM), so that the emission standards in each rule apply at all times. Second, the EPA is requiring electronic reporting of performance test results. Finally, the EPA is requiring monitoring of pressure relief devices (PRDs) in organic HAP service that release to the atmosphere.

With regard to the NESHAP for P&R IV, the EPA is making revisions in three additional areas. First, the EPA is addressing certain emissions that were not previously regulated. Second, the EPA is providing alternative compliance demonstration methods during periods of startup and shutdown. Third, the EPA is lifting the stay of requirements for process contact cooling towers at existing sources in one P&R IV subcategory.

3. Costs and Emission Reductions

Table 1 below summarizes the costs and emission reductions for this action. See section VII of this preamble for further discussion of the costs and impacts.

TABLE 1—SUMMARY OF THE COSTS AND EMISSION REDUCTIONS FOR THE FINAL GROUP IV POLYMERS AND RESINS, PESTICIDE ACTIVE INGREDIENT PRODUCTION AND POLYETHER POLYOLS PRODUCTION NESHAP AMENDMENTS

NESHAP	Number of affected plants	Capital costs (\$)	Annualized costs (\$/yr)	Emission reductions (tpy)
NESHAP: Group IV Polymers and Resins	31	\$3,800,000	\$566,000	N/A
NESHAP for Pesticide Active Ingredient Production	18	1,500,000	222,000	N/A
NESHAP for Polyether Polyols	23	1,600,000	242,000	N/A

B. Does this action apply to me?

Regulated Entities. Table 2 lists categories and entities potentially regulated by this action. Table 2 is not intended to be exhaustive, but rather

provides a guide for readers regarding entities likely to be affected by this final action for the source categories listed. To determine whether your facility would be affected, you should examine the applicability criteria in the

appropriate NESHAP. If you have any questions regarding the applicability of any of these NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

TABLE 2—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

	NESHAP and source category	NAICS Code ¹
Group IV Polymers and Resins	Acrylic-Butadiene-Styrene Production	325211
	Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene Production ²	325211
	Methyl Methacrylate-Butadiene-Styrene Production	325211
	Nitrile Resins Production ²	325211
	Polyethylene Terephthalate Production	325211
	Polystyrene Production	325211
	Styrene-Acrylonitrile Production	325211
Pesticide Active Ingredient Production		325199, 325320
Polyether Polyols Production		325199

¹ North American Industry Classification System.

² There are no longer any operating facilities in either the Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene Production or Nitrile Resins Production source categories, and none are anticipated to begin operation in the future. Therefore, this final rule does not address these source categories.

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 final action will be available on the Internet through the Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this final action on the TTN's policy and guidance page for newly proposed or promulgated rules at: <http://www.epa.gov/ttn/oarpg/t3pfpr.html>. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the final action and key technical documents on the project Web sites: <http://www.epa.gov/ttn/atw/pr4/pr4pg.html>, <http://www.epa.gov/ttn/atw/polyol/polyolpg.html> and <http://www.epa.gov/ttn/atw/pest/pestpg.html>. Information on the overall RTR program is available at the following Web site: <http://www.epa.gov/ttn/atw/risk/rtrpg.html>.

D. Judicial Review

Under section 307(b)(1) of the CAA, 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 May 27, 2014. 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 us 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. EPA, Room 3000, William Jefferson Clinton Federal 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 Information for This Final Rule

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of HAP from stationary sources. In the first stage, after the EPA

has identified categories of sources emitting one or more of the HAP listed in CAA section 112(b), section 112(d) calls for us to promulgate technology-based NESHAP for those sources.

"Major sources" are those that emit, or have the potential to emit, any single HAP at a rate of 10 tons per year (tpy) or more, or 25 tpy or more of any combination of HAP. For major sources, these technology-based standards must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements and non-air quality health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards.

For MACT standards, the statute specifies certain minimum stringency requirements, which are referred to as floor requirements and may not be based on cost considerations. See CAA section 112(d)(3). For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The MACT standards for existing sources can be less stringent than floors for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT, we must also consider control options that are more stringent than the floor,

under CAA section 112(d)(2). We may establish standards more stringent than the floor, based on the consideration of the cost of achieving the emission reductions, any non-air quality health and environmental impacts and energy requirements. In promulgating MACT standards, CAA section 112(d)(2) directs us to consider the application of measures, processes, methods, systems or techniques that reduce the volume of or eliminate HAP emissions through process changes, substitution of materials or other modifications; enclose systems or processes to eliminate emissions; collect, capture or treat HAP when released from a process, stack, storage or fugitive emissions point; and/or are design, equipment, work practice or operational standards.

In the second stage of the regulatory process, we undertake two different analyses, as required by the CAA: Section 112(d)(6) of the CAA calls for us to review these technology-based standards and to revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less frequently than every 8 years; and within 8 years after promulgation of the technology-based standards, CAA section 112(f) calls for us to evaluate the risk to public health remaining after application of the technology-based standards and to revise the standards, if necessary, to provide an ample margin of safety to protect public health or to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect. In doing so, the EPA may adopt standards equal to existing MACT standards if the EPA determines that the existing standards are sufficiently protective. *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Cir. 2008).

On January 9, 2012, the EPA published a proposed rule for the PAI, PEPO and P&R IV MACT standards that took into consideration the RTR analyses (77 FR 1268). For these MACT standards, today's action provides the EPA's final determinations pursuant to the RTR provisions of CAA section 112. In addition, we are promulgating amendments for each of these NESHAP as follows:

Group IV Polymers and Resins

- Revisions to address certain emission sources not previously regulated under the standards.
- Revisions to clarify requirements for Precompliance Reports.
- Revisions to requirements related to emissions during periods of SSM.
- Revisions to requirements related to performance test electronic reporting.

- Revisions to allow for alternative compliance determination methods during periods of startup and shutdown.
- Revisions to the requirements related to PRDs.

Pesticide Active Ingredient Production

- Revisions to the definition of "pesticide active ingredient."
- Revisions to clarify requirements for Precompliance Plans.
- Revisions to requirements related to emissions during periods of SSM.
- Revisions to requirements related to performance test electronic reporting.
- Clarifications to the provisions for packed-bed scrubbers.
- Revisions to the requirements related to PRDs.

Polyether Polyols Production

- Revisions to clarify requirements for Precompliance Reports.
- Revisions to requirements related to emissions during periods of SSM.
- Revisions to requirements related to performance test electronic reporting.
- Revisions to the requirements related to PRDs.

Section III of this preamble presents a summary of the final rule amendments for the P&R IV, PAI and PEPO MACT standards.

III. Summary of the Final Rule Amendments

A. What are the final rule amendments for the Group IV Polymers and Resins MACT standards?

The P&R IV MACT standards apply to major sources and regulate HAP emissions from seven thermoplastics production source categories: Acrylonitrile butadiene styrene (ABS), styrene acrylonitrile (SAN), methyl methacrylate acrylonitrile butadiene styrene (MABS), methyl methacrylate butadiene styrene resin (MBS), polystyrene (PS), poly (ethylene terephthalate) (PET) and nitrile resin.¹ Sources of HAP emissions from thermoplastics production include breathing and withdrawal losses from chemical storage tanks, venting of process vessels, leaks from piping and equipment used to transfer HAP compounds (equipment leaks) and volatilization of HAP from wastewater streams.

Only five of the seven P&R IV source categories have facility operations in the U.S.: ABS, SAN, MBS, PET and PS Production. For these five source

¹ There are no longer any operating facilities in either the MABS Production or Nitrile Resins Production source categories, and none are anticipated to begin operation in the future. Therefore, this final rule does not address these source categories.

categories, we have determined that the current MACT standards reduce risk to an acceptable level, provide an ample margin of safety to protect public health and prevent adverse environmental effects. Therefore, it is not necessary to revise the MACT standards pursuant to CAA section 112(f).² We have also determined that there are no viable developments in HAP emission reduction practices, processes or control technologies to apply to the emission sources in these source categories, considering the technical feasibility, estimated costs, energy implications, non-air environmental impacts and emission reductions of the options identified. Therefore, it is not necessary to revise the MACT standards pursuant to CAA section 112(d)(6).

We are establishing standards at the MACT floor level of control for previously unregulated HAP emissions from equipment leaks and process contact cooling towers (PCCT) in the PET continuous terephthalic acid (TPA) high viscosity multiple end finisher subcategory, which has one facility currently in operation. For equipment leaks, the standards being finalized are work practices that include performing a 2- to 3-hour leak check upon startup following an outage where changes have been made to the facility's esterification equipment. This leak check is conducted by introducing hot ethylene glycol vapors into the system. Any leaks identified must be repaired by tightening flange bolts before introducing new materials into the process. For PCCT, the standard being finalized is a concentration limit of ethylene glycol in the PCCT at or below 6.0 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days.

We are finalizing changes to the P&R IV MACT standards to eliminate the SSM exemption. Consistent with *Sierra Club v. EPA*, the standards in this rule apply at all times. We have also revised Table 1 to subpart JJJ (the General Provisions applicability table) in several respects. For example, we have eliminated the incorporation of the General Provisions' requirement that the source develop an SSM plan. We have also eliminated or revised certain recordkeeping and reporting requirements related to the eliminated SSM exemption. The EPA has also made

² The U.S. Court of Appeals has affirmed this approach of implementing CAA section 112(f)(2)(A): *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Cir. 2008) ("If EPA determines that the existing technology-based standards provide an 'ample margin of safety,' then the Agency is free to readopt those standards during the residual risk rulemaking.").

changes to the rule to remove or modify inappropriate, unnecessary or redundant language in the absence of the SSM exemption. Additionally, we are adding provisions to provide an affirmative defense to civil penalties for violations of emission standards caused by malfunctions, as well as criteria for establishing the affirmative defense.

In establishing the standards in this rule, the EPA has taken into account startup and shutdown periods and is establishing alternative compliance demonstration methods for those affected sources subject to emission limits expressed as mass emissions per mass product produced for continuous process vents. The final rule amendments (40 CFR 63.1315(a)(19) and (b)(2), 40 CFR 63.1316(b)(1)(i)(A), (b)(1)(ii)(A), (b)(2)(i)(A), (b)(2)(ii)(A), and (c)(1)(i), and 40 CFR 63.1318(b)(1) and (c)) allow facilities to demonstrate compliance with the rule by either: (1) Keeping records that establish the raw material feed rate and production rate were both zero; (2) meeting the limit by dividing the emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero; or (3) keeping records that establish the operating parameters of the control device used to comply with the rule were maintained at the level established to meet the emission limit at maximum representative operating conditions. See section VI.B of this preamble for greater detail regarding the commenters' concerns regarding meeting standards for continuous process vents during startup and shutdown periods and our response to those concerns.

We have also added requirements in 40 CFR 63.1331(a)(9) to require monitoring of PRDs in organic HAP service that release to the atmosphere and clarify that pressure releases from such PRDs are prohibited. We have also added requirements in 40 CFR 63.1335(e)(6)(xiii) to require reporting of any PRD releases to the atmosphere with the next periodic report.

We are also requiring the electronic submittal of performance test data to increase the ease and efficiency of data submittal and to improve data accessibility. Specifically, owners or operators of P&R IV facilities are required to submit electronic copies of applicable reports of performance tests to the EPA's WebFIRE database through an electronic emissions test report structure called the Electronic Reporting Tool (ERT). This requirement to submit performance test data electronically to the EPA does not require any additional performance testing, and applies only to

those performance tests conducted using test methods that are supported by the ERT.

We have also clarified in 40 CFR 63.1335(e)(3)(i) the requirements for Precompliance Reports where an initial Precompliance Report is needed after the compliance date for the rule.

B. What are the final rule amendments for the Pesticide Active Ingredient Production MACT standards?

The PAI manufacturing process consists of the production of active ingredients in insecticides, herbicides, fungicides and related products, which are typically then formulated with inert ingredients to create end-product pesticides for application. The PAI MACT standards apply only to the active ingredient production. Emissions occur from breathing and withdrawal losses from chemical storage tanks, venting of process vessels, leaks from piping and equipment used to transfer HAP compounds (equipment leaks), volatilization of HAP from wastewater streams, evaporation from dryers and dust from bag dumps.

For the PAI source category, we have determined that the current MACT standards reduce risk to an acceptable level, provide an ample margin of safety to protect public health and prevent adverse environmental effects. Therefore, it is not necessary to revise the MACT standards pursuant to CAA section 112(f).³ We have also determined that there are no viable developments in HAP emission reduction practices, processes or control technologies to apply to the emission sources in this source category, considering the technical feasibility, estimated costs, energy implications, non-air environmental impacts and emission reductions of the options identified. Therefore, it is not necessary to revise the MACT standards pursuant to CAA section 112(d)(6).

We are finalizing changes to the PAI MACT standards to eliminate the SSM exemption. Consistent with *Sierra Club v. EPA*, the standards in this rule apply at all times. We have also revised Table 1 of subpart MMM (the General Provisions applicability table) in several respects. For example, we have eliminated the incorporation of the General Provisions' requirement that the source develop an SSM plan. We have also eliminated or revised certain recordkeeping and reporting requirements related to the eliminated SSM exemption. We have determined that facilities in this source category can meet the applicable emission standards

³ See footnote 2.

at all times, including periods of startup and shutdown, in compliance with the current MACT standards, and no additional standards are needed to address emissions during these periods. The EPA has also made changes to the rule to remove or modify inappropriate, unnecessary or redundant language in the absence of the SSM exemption. Additionally, we are adding provisions to provide an affirmative defense to civil penalties for violations of emission standards caused by malfunctions, as well as criteria for establishing the affirmative defense.

We have added requirements in 40 CFR 63.1363(b)(4) to require monitoring of PRDs in organic HAP service that release to the atmosphere and clarify that pressure releases from such PRDs are prohibited. We have also added requirements in 40 CFR 63.1363(h)(3)(v) to require reporting of any PRD releases to the atmosphere with the next periodic report.

We are also requiring the electronic submittal of performance test data to increase the ease and efficiency of data submittal and to improve data accessibility. Specifically, owners or operators of PAI facilities are required to submit electronic copies of applicable reports of performance tests to the EPA's WebFIRE database through an electronic emissions test report structure called the ERT. This requirement to submit performance test data electronically to the EPA does not require any additional performance testing, and applies only to those performance tests conducted using test methods that are supported by the ERT.

We have also clarified in 40 CFR 63.1368(e) that sources may submit a Precompliance Plan to request alternative compliance options after the compliance date has passed or construction or preconstruction applications have already been submitted.

In addition, we have added clarifications to the provisions for packed-bed scrubbers in 40 CFR 63.1366(b)(1)(ii). We have also revised the definition for "pesticide active ingredient."

C. What are the final rule amendments for the Polyether Polyols Production MACT standards?

The PEPO manufacturing process involves the reaction of ethylene oxide, propylene oxide or other cyclic ethers with compounds having one or more reactive hydrogens to form chemical products with repeating ether linkages (i.e., -R-O-R-). These polyether polyols do not have significant uses of their own but are used to make a variety of other

products, such as polyurethane foams, microcellular products, surface coatings, elastomers, fibers, adhesives, sealants, surfactants, lubricants, degreasing agents, hydraulic fluids, cosmetics and pharmaceuticals. The HAP emission sources at PEPO facilities include process vents, storage vessels, equipment leaks and wastewater; and at some facilities, cooling towers or other heat exchangers.

For these PEPO facilities, we have determined that the current MACT standards reduce risk to an acceptable level, provide an ample margin of safety to protect public health and prevent adverse environmental effects. Therefore, it is not necessary to revise the MACT standards pursuant to CAA section 112(f).⁴ We have also determined that there are no viable developments in HAP emission reduction practices, processes or control technologies to apply to the emission sources in this source category, considering the technical feasibility, estimated costs, energy implications, non-air environmental impacts and emission reductions of the options identified. Therefore, it is not necessary to revise the MACT standards pursuant to CAA section 112(d)(6).

We are finalizing changes to the PEPO MACT standards to eliminate the SSM exemption. Consistent with *Sierra Club v. EPA*, the standards in this rule apply at all times. We have also revised Table 1 of subpart PPP (the General Provisions applicability table) in several respects. For example, we have eliminated the incorporation of the General Provisions' requirement that the source develop an SSM plan. We have also eliminated or revised certain recordkeeping and reporting requirements related to the eliminated SSM exemption. We have determined that facilities in this source category can meet the applicable emission standards at all times, including periods of startup and shutdown, in compliance with the current MACT standards, and no additional standards are needed to address emissions during these periods. The EPA has also made changes to the rule to remove or modify inappropriate, unnecessary or redundant language in the absence of the SSM exemption. Additionally, we are adding provisions to provide an affirmative defense to civil penalties for violations of emission standards caused by malfunctions, as well as criteria for establishing the affirmative defense.

We have added requirements in 40 CFR 63.1434(c) to require monitoring of PRDs in organic HAP service that

release to the atmosphere, and clarify that pressure releases from such PRDs are prohibited. We have also added requirements in 40 CFR 63.1439(e)(6)(ix) for facilities to report when any PRD in organic HAP service releases to the atmosphere with the next periodic report.

We are also requiring the electronic submittal of performance test data to increase the ease and efficiency of data submittal and to improve data accessibility. Specifically, owners or operators of PEPO facilities are required to submit electronic copies of applicable reports of performance tests to the EPA's WebFIRE database through an electronic emissions test report structure called the ERT. This requirement to submit performance test data electronically to the EPA does not require any additional performance testing, and applies only to those performance tests conducted using test methods that are supported by the ERT.

We have also clarified in 40 CFR 63.1439(e)(4)(i) the requirements for Precompliance Reports where an initial Precompliance Report is needed after the compliance date for the rule.

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

Under CAA section 112(d), for new and existing sources subject to the PAI, PEPO and P&R IV MACT standards, the compliance date for the revised SSM requirements (other than PRD monitoring for existing sources and new sources that commenced construction or reconstruction on or before January 12, 2012) and electronic reporting requirements is the effective date of the promulgated standards, March 27, 2014. We are finalizing these compliance dates because these requirements should be immediately implementable by the facilities upon the next occurrence of a malfunction or a performance test that is required to be submitted to the ERT. Available information suggests that the facilities should already be able to comply with the existing standards during periods of startup and shutdown.

Under CAA section 112(i)(3), for new sources that commenced construction or reconstruction on or before January 12, 2012, and existing sources subject to the PAI, PEPO and P&R IV MACT standards, the compliance date for PRD monitoring is 3 years from the effective date of the promulgated standards, March 27, 2017. This time is needed regardless of whether an owner or operator of a facility chooses to comply with the PRD monitoring provisions by installing PRD release indicator systems and alarms, employing parameter

monitoring, or by routing releases to a control device. This time period will allow facilities to research equipment and vendors, purchase, install, test and properly operate any necessary equipment by the compliance date.

For the existing facility in the PET continuous TPA high viscosity multiple end finisher subcategory subject to the P&R IV MACT standards, the compliance date for the new MACT standards applicable to equipment leaks and PCCTs is the effective date of the promulgated standards, March 27, 2014. We are finalizing this compliance date because the existing facility in this subcategory is already complying with the promulgated standards.

IV. Compliance-Related Issues Common to the NESHAP

A. How do the rules address startup, shutdown and malfunction?

In its 2008 decision in *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), *cert. denied*, 130 S. Ct. 1735 (U.S. 2010), 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(b)(1) holding that under section 302(k) of the CAA, emission 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.

We have eliminated the SSM exemption in these rules. Consistent with *Sierra Club v. EPA*, the standards in all three NESHAP apply at all times. We have also revised the General Provisions applicability tables in all three NESHAP, as applicable, in several respects, as is explained in more detail below. For example, we have eliminated the incorporation of the General Provisions' requirement that sources develop an SSM plan. We have also eliminated and revised certain NESHAP recordkeeping and reporting that is related to the eliminated SSM exemption, as described in detail in the proposed rule and summarized again here.

In establishing the standards in these final rule amendments, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not established alternate standards for these periods for the PAI, PEPO and P&R IV MACT standards.

For the P&R IV MACT standards, we received comments from industry that

⁴ See footnote 2.

opine that it may not be possible to comply with emission limits at all times in the absence of an exemption for SSM periods. Specifically, the commenters asserted that emission limits expressed as a unit of mass emitted per unit of mass of product created for process vents or destruction efficiency standards could be exceeded during times of startup and shutdown. The commenters asserted this is due to the small amount of product being produced and/or lower rate of HAP emissions and higher rate of supplemental fuel sent to control devices during startup and shutdown periods. The commenters suggested that the EPA establish alternative startup and shutdown work practice standards, where meeting operating parameters could be used to comply with the rule in lieu of the production rate and destruction efficiency standards during startup and shutdown periods. Per the commenters, these operating parameters would be representative of the required level of control at continuous steady-state conditions, or routing to a control device that has been demonstrated to meet the necessary destruction efficiency standards at maximum operating conditions.

The EPA evaluated the commenters' concerns and disagrees that separate standards to address startup and shutdown periods are warranted. We agree that demonstrating compliance with a mass of emissions per mass of product produced limit may be problematic as production approaches zero, however. Therefore, we are establishing alternative compliance demonstration methods for those affected sources subject to emission limits expressed as mass emissions per mass product produced for continuous process vents. The final rule amendments (40 CFR 63.1315(a)(19) and (b)(2), 40 CFR 63.1316(b)(1)(i)(A), (b)(1)(ii)(A), (b)(2)(i)(A), (b)(2)(ii)(A), and (c)(1)(i), and 40 CFR 63.1318(b)(1) and (c)) allow facilities to demonstrate compliance with the rule by either: (1) Keeping records that establish the raw material feed rate and production rate were both zero; (2) meeting the limit by dividing the emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero; or (3) keeping records that establish the operating parameters of the control device used to comply with the rule were maintained at the level established to meet the emission limit at maximum representative operating conditions. See section VI.B of this preamble for greater detail regarding the commenters'

concerns regarding standards for continuous process vents during startup and shutdown periods and our response to those concerns.

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a "sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner . . ." (40 CFR 63.2). The EPA has determined that CAA section 112 does not require that emissions occurring during periods of malfunction be factored into development of CAA section 112 standards. Under CAA section 112, emission standards for new sources must be no less stringent than the level "achieved" by the best controlled similar source and, for existing sources, generally must be no less stringent than the average emission limitation "achieved" by the best-performing 12 percent of sources in the category. There is nothing in CAA section 112 that directs the EPA to consider malfunctions in determining the level "achieved" by the best performing or best controlled sources when setting emission standards. Moreover, while the EPA accounts for variability in setting emission standards consistent with CAA section 112 case law, nothing in that case law requires the EPA to consider malfunctions as part of that analysis. CAA section 112 uses the concept of "best controlled" and "best performing" unit in defining the level of stringency that CAA section 112 performance standards must meet. Applying the concept of "best controlled" or "best performing" to a unit that is malfunctioning presents significant difficulties, as malfunctions are sudden and unexpected events.

Further, accounting for malfunctions would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the source categories amended with this action, and the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. As such, the performance of units that are malfunctioning is not "reasonably" foreseeable. See, e.g., *Sierra Club v. EPA*, 167 F. 3d 658, 662 (D.C. Cir. 1999) ("[T]he EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to 'invest the resources to conduct

the perfect study.'"). See also, *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1058 (D.C. Cir. 1978) ("In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation."). In addition, the goal of a best-controlled or best-performing source is to operate in such a way as to avoid malfunctions. Accounting for malfunctions could lead to standards that are significantly less stringent than levels achieved by a well-performing non-malfunctioning source. The EPA's approach to malfunctions is consistent with CAA section 112 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 112(d) standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 112(d) standard was, in fact, a result of a "sudden, infrequent, not reasonably preventable" event and was not instead "caused in part by poor maintenance or careless operation." 40 CFR 63.2 (definition of malfunction).

Finally, the EPA recognizes that even equipment that is properly designed and maintained can sometimes fail and that such failure can sometimes cause a violation of the relevant emission standard. See, e.g., *State Implementation Plans: Response to Petition for Rulemaking; Findings of Excess Emissions During Periods of Startup, Shutdown, and Malfunction*; Proposed rule, 78 FR 12460 (February 22, 2013); *State Implementation Plans: Policy Regarding Excessive Emissions During Malfunctions, Startup, and Shutdown* (September 20, 1999); *Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions* (February 15, 1983). The EPA is therefore adding to the final rules an affirmative defense to civil penalties for violations of emission standards that are caused by malfunctions. (See 40 CFR 63.1312,

63.1361 and 63.1423 defining “affirmative defense” to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding). We also have added other regulatory provisions to specify the elements that are necessary to establish this affirmative defense; a source subject to the PAI, PEPO or P&R IV MACT standards must prove by a preponderance of the evidence that it has met all of the elements set forth in 40 CFR 63.1310(k), 63.1360(k) and 63.1420(i). (See 40 CFR 22.24). The added criteria are designed in part to ensure that the affirmative defense is available only where the event that causes a violation of the emission standard meets the narrow definition of malfunction in 40 CFR 63.2 (sudden, infrequent, not reasonably preventable and not caused by poor maintenance and/or careless operation). For example, the final rule amendments provide that, to successfully assert the proposed affirmative defense, the source must prove by a preponderance of evidence that the violation was caused by a sudden, infrequent, and unavoidable failure of air pollution control and process equipment, or a process to operate in a normal or usual manner. The added criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with 40 CFR 63.1310(j)(4), 63.1360(e)(4) and 63.1420(h)(4); and to prevent future malfunctions. For example, under the added criteria, the source must prove by a preponderance of the evidence that repairs were made as expeditiously as possible when a violation occurred and that all possible steps were taken to minimize the impact of the violation on ambient air quality, the environment and human health. In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense and, if the respondent has not met its burden of proving all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with section 113 of the CAA (see also 40 CFR 22.27).

The EPA included in the final rule amendments for the PAI, PEPO and P&R IV source categories an affirmative defense in an attempt to balance a tension, inherent in many types of air regulations, to ensure adequate compliance, while simultaneously recognizing that, despite the most

diligent of efforts, emission standards may be violated under circumstances beyond the control of the source. The EPA must establish emission standards that “limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.” CAA section 302(k), 42 U.S.C. 7602(k) (defining “emission limitation” and “emission standard”). See generally, *Sierra Club v. EPA*, 551 F.3d 1019, 1021 (D.C. Cir. 2008). Thus, the EPA is required to ensure that emission standards are continuous. The affirmative defense for malfunction events meets this requirement by ensuring that, even where there is a malfunction, the emission standard is still enforceable through injunctive relief. The United States Court of Appeals for the Fifth Circuit recently upheld the EPA’s view that an affirmative defense provision is consistent with section 113(e) of the CAA. *Luminant Generation Co. LLC v. United States EPA*, 714 F.3d 841 (5th Cir. March 25, 2013) (upholding the EPA’s approval of affirmative defense provisions in a CAA State Implementation Plan). While “continuous” standards are required, there is also case law indicating, in many situations, it is appropriate for the EPA to account for the practical realities of technology. For example, in *Essex Chemical v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973), the DC Circuit acknowledged that, in setting standards under CAA section 111, “variant provisions” such as provisions allowing for upsets during startup, shutdown and equipment malfunction “appear necessary to preserve the reasonableness of the standards as a whole and that the record does not support the ‘never to be exceeded’ standard currently in force.” See, also, *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375 (D.C. Cir. 1973). Though these earlier cases may no longer represent binding precedent in light of the CAA 1977 amendments and intervening case law such as *Sierra Club v. EPA*, they nevertheless support the EPA’s view that a system that incorporates some level of flexibility is reasonable and appropriate. The affirmative defense simply provides for a defense to civil penalties for violations that are proven to be beyond the control of the source. Through the incorporation of an affirmative defense, the EPA has formalized its approach to malfunctions. In a Clean Water Act setting, the Ninth Circuit required this type of formalized approach when regulating “upsets beyond the control of the permit holder.” *Marathon Oil Co. v. EPA*, 564 F.2d 1253, 1272–73 (9th Cir. 1977). See,

also, *Mont. Sulphur & Chem. Co. v. EPA*, 666 F.3d 1174 (9th Cir. 2012) (rejecting industry argument that reliance on the affirmative defense was not adequate). But see, *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1057–58 (D.C. Cir. 1978) (holding that an informal approach is adequate). The final affirmative defense provisions give the EPA the flexibility to both ensure that its emission standards are “continuous,” as required by CAA section 302(k), 42 U.S.C. 7602(k), and account for unplanned upsets and, thus, support the reasonableness of the standard as a whole. The EPA is promulgating the affirmative defense applicable to malfunctions under the delegation of general regulatory authority set out in section 301(a)(1) of the CAA, 42 U.S.C. 7601(a)(1), in order to balance this tension between provisions of the CAA and the practical reality, as case law recognizes, that technology sometimes fails. See generally, *Citizens to Save Spencer County v. U.S. Environmental Protection Agency*, 600 F.2d 844, 873 (D.C. Cir. 1979) (using section 301(a) authority to harmonize inconsistent guidelines related to the implementation of federal preconstruction review requirements).

Refer to the explanations below and sections V and VI of this preamble and the Response to Comments document, available in the docket for this action, for further discussion regarding SSM-related changes made to the PAI, PEPO and P&R IV MACT standards.

1. General Duty

For the PAI MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart MMM) entry for 40 CFR 63.6(e)(1)(i) by changing the “yes” in the second column to a “no.” Section 63.6(e)(1)(i) describes the general duty to minimize emissions. Some of the language in that section is no longer necessary or appropriate in light of the elimination of the SSM exemption. Similarly, for the P&R IV and PEPO MACT standards, we are also removing this requirement at 40 CFR 63.1310(j)(4) and 40 CFR 63.1420(h)(4), respectively. For the P&R IV, PAI and PEPO MACT standards, we are instead adding general duty regulatory text at 40 CFR 63.1310(j)(4), 63.1360(e)(4) and 63.1420(h)(4), respectively, that reflects the general duty to minimize emissions while eliminating the reference to periods covered by an SSM exemption. The current language in 40 CFR 63.6(e)(1)(i) characterizes what the general duty entails during periods of SSM. With the elimination of the SSM exemption,

there is no need to differentiate between normal operations, startup and shutdown, and malfunction events in describing the general duty. Therefore the language the EPA is promulgating does not include that language from 40 CFR 63.6(e)(1).

For the P&R IV, PAI and PEPO MACT standards, we are also revising the General Provisions applicability table (Table 1 to Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entry for 40 CFR 63.6(e)(1)(ii) by changing the "yes" in the second column to a "no." Section 63.6(e)(1)(ii) imposes requirements that are not necessary with the elimination of the SSM exemption or are redundant with the general duty requirement being added at 40 CFR 63.1310(j)(4), 63.1360(e)(4) and 63.1420(h)(4).

2. SSM Plan

For the P&R IV, PAI and PEPO MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entry for 40 CFR 63.6(e)(3) by changing the "yes" in the second column to a "no." Generally, these paragraphs require development of an SSM plan and specify SSM recordkeeping and reporting requirements related to the SSM plan. As noted, the EPA is removing the SSM exemptions. Therefore, affected units will be subject to an emission standard during such events. The applicability of a standard during such events will ensure that sources have ample incentive to plan for and achieve compliance and thus the SSM plan requirements are no longer necessary.

3. Compliance With Standards

For the P&R IV, PAI and PEPO MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entry for 40 CFR 63.6(f)(1) by changing the "yes" in the second column to a "no." The current language of 40 CFR 63.6(f)(1) exempts sources from non-opacity standards during periods of SSM. As discussed above, the court in *Sierra Club* vacated the exemptions contained in this provision and held that the CAA requires that some section 112 standard apply continuously. Consistent with *Sierra Club*, the EPA is revising standards in this rule to apply at all times.

4. Performance Testing

For the P&R IV, PAI and PEPO MACT standards, we are revising the General Provisions applicability table (Table 1 to

Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entry for 40 CFR 63.7(e)(1) by changing the "yes" in the second column to a "no." Section 63.7(e)(1) describes performance testing requirements. The EPA is instead adding a performance testing requirement at 40 CFR 63.1333(a), 63.1365(b) and 63.1437(a). The performance testing requirements we are adding differ from the General Provisions performance testing provisions in several respects. The regulatory text does not include the language in 40 CFR 63.7(e)(1) that restated the SSM exemption and language that precluded startup and shutdown periods from being considered "representative" for purposes of performance testing. The revised performance testing provisions do not allow performance testing during periods of startup or shutdown. As in 40 CFR 63.7(e)(1), performance tests conducted under this subpart should not be conducted during malfunctions because conditions during malfunctions are often not representative of normal operating conditions. The EPA is adding language that requires the owner or operator to 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. 40 CFR 63.7(e) requires that the owner or operator make available to the Administrator such records "as may be necessary to determine the condition of the performance test" available to the Administrator upon request, but does not specifically require the information to be recorded. The regulatory text the EPA is adding to this provision builds on that requirement and makes explicit the requirement to record the information.

5. Monitoring

For the P&R IV, PAI and PEPO MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entries for § 63.8(c)(1)(i) and (iii) by changing the "yes" in the second column to a "no." The cross-references to the general duty and SSM plan requirements in those subparagraphs are not necessary in light of other requirements of 40 CFR 63.8 that require good air pollution control practices (40 CFR 63.8(c)(1)) and that set out the requirements of a quality control program for monitoring equipment (40 CFR 63.8(d)).

For the PAI MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart MMM) entry for 40 CFR 63.8(d)(3) by changing the explanation in the third column. The final sentence in 40 CFR 63.8(d)(3) refers to the General Provisions' SSM plan requirement, which is no longer applicable. The EPA is adding the explanation that the program of corrective action should be included in the plan required under 40 CFR 63.8(d)(2).

6. Recordkeeping

For the PAI MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart MMM) entry for 40 CFR 63.10(c)(15) by changing the "yes" in the second column to a "no." The EPA is promulgating that 40 CFR 63.10(c)(15) no longer apply. When applicable, the provision allows an owner or operator to use the affected source's SSM plan or records kept to satisfy the recordkeeping requirements of the startup, shutdown, and malfunction plan, specified in 40 CFR 63.6(e), to also satisfy the requirements of 40 CFR 63.10(c)(10) through (12). The EPA is eliminating this requirement because SSM plans will no longer be required, and therefore 40 CFR 63.10(c)(15) no longer serves any useful purpose for affected units.

7. Reporting

For the P&R IV, PAI and PEPO MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entry for 40 CFR 63.10(d)(5) by changing the "yes" in the second column to a "no." Section 63.10(d)(5) describes the reporting requirements for startups, shutdowns, and malfunctions. To replace the General Provisions reporting requirement, the EPA is adding reporting requirements to 40 CFR 63.1335(b)(1)(ii), 63.1368(i) and 63.1439(b)(1)(ii). The replacement language differs from the General Provisions requirement in that it eliminates periodic SSM reports as a stand-alone report. We are promulgating language that requires sources that fail to meet an applicable standard at any time to report the information concerning such events in the semi-annual periodic report already required under these rules. We are promulgating that the report must contain the number, date, time, duration and cause of such events (including unknown cause, if applicable), a list of the affected source 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.

Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is promulgating this requirement to ensure that there is adequate information to determine compliance, to allow the EPA to determine the severity of the failure to meet an applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.

We will no longer require owners or operators to determine whether actions taken to correct a malfunction are consistent with an SSM plan, because plans will no longer be required. The final amendments therefore eliminate the cross reference to 40 CFR 63.10(d)(5)(i) that contains the description of the previously required SSM report format and submittal schedule from this section. These specifications are no longer necessary because the events will be reported in otherwise required reports with similar format and submittal requirements.

We note that reporting a failure to meet an applicable standard could include malfunction events for which a source may choose to submit documentation to support an assertion of affirmative defense. If a source provides all the material required in 40 CFR 63.1310(k), 63.1360(k) or 63.1420(i) to support an affirmative defense, the source need not submit the same information two times in the same report. While assertion of an affirmative defense is not mandatory and would occur only if a source chooses to take advantage of the affirmative defense, the finalized affirmative defense also requires additional reporting that goes beyond these routine requirements related to a failure to meet an applicable standard for a reason other than a malfunction.

For the P&R IV, PAI and PEPO MACT standards, we are revising the General Provisions applicability table (Table 1 to Subpart JJJ, Table 1 to Subpart MMM, and Table 1 to Subpart PPP, respectively) entry for 40 CFR 63.10(d)(5)(ii) by changing the "yes" in the second column to a "no." Section 63.10(d)(5)(ii) describes an immediate report for startups, shutdown and malfunctions when a source failed to meet an applicable standard but did not follow the SSM plan. We will no longer require owners or operators to report when actions taken during a startup,

shutdown, or malfunction were not consistent with an SSM plan, because plans will no longer be required.

8. Pressure Relief Devices

The original MACT standards recognized pressure releases from PRDs to be the result of malfunctions. PRDs are designed to remain closed during normal operation and only release as the result of unplanned and/or unpredictable events. A release from a PRD usually occurs during an over pressurization of the system. However, emissions vented directly to the atmosphere by PRDs in organic HAP service contain HAP that are otherwise regulated under the MACT standards that apply to these source categories.

The original MACT standards for these source categories regulated PRDs through equipment leak provisions that applied only during non-release operations. In addition, the rules followed the EPA's then-practice of exempting SSM events from otherwise applicable emissions standards. Consequently, with "pressure releases" being defined as HAP emitting events that occur during malfunctions, the original MACT standards did not restrict pressure releases from PRDs emitted directly to the atmosphere but instead treated them the same as all malfunctions through the SSM exemption provision.

In *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), the Court determined that the SSM exemption violated the CAA. See section IV.A of this preamble for additional discussion. To ensure these standards are consistent with that decision, the final rule revisions remove the malfunction exemptions in the prior MACT standards. In addition, in order for our treatment of malfunction-caused pressure releases directly to the atmosphere to conform with the reasoning of the Court's ruling, the final rule adds a provision stating that HAP emissions releases directly to the atmosphere from PRDs in organic HAP service are prohibited.

In the proposal, we proposed to eliminate the SSM exemption from the standards. In addition, we stated that under the proposed revised rule releases to the atmosphere from PRDs would constitute violations of the revised rule. However, although we proposed revised regulatory text to eliminate the SSM exemptions from the rules, we omitted a proposed regulatory provision that would have given effect to the proposed intended prohibition of such PRD releases. In order to give effect to the proposed prohibition, which we are finalizing in this action, we are adding express regulatory language in the final

rule revisions that clarifies our intent that pressure releases from PRDs in organic HAP service to the atmosphere are prohibited. This is a necessary additional revision to give full effect to our elimination of the general exemption for malfunctions, in light of the Court's reasoning in *Sierra Club*, and is similar to revisions that we have made in other rules in which the SSM exemption has been eliminated (see, e.g., NESHAP for Polyvinyl Chloride and Copolymers Production (77 FR 22848, April 17, 2012)). As with any malfunction event under the revised rules, an owner or operator may assert an affirmative defense against civil penalties for a malfunction causing a prohibited pressure release from a PRD in organic HAP service to the atmosphere.

To address potential releases from PRDs, we are further requiring facility owners or operators subject to these three MACT standards to employ monitoring capable of: (1) Identifying the pressure release; (2) recording the time and duration of each pressure release; and (3) notifying operators immediately that a pressure release is occurring. Owners or operators are required to keep records and report any pressure release and the amount of organic HAP released to the atmosphere with the next periodic report.

Pressure release events from PRDs in organic HAP service to the atmosphere have the potential to emit large quantities of HAP. Where a release occurs, it is important to identify and mitigate it as quickly as possible. We recognize that industry has stated that they believe releases from PRDs sometimes occur in order to protect systems from failures that could endanger worker safety and the systems that the PRDs are designed to protect. We have provided a balanced approach designed to minimize emissions while recognizing that these events may be unavoidable even in a well-designed and maintained system. Therefore, we are requiring that sources monitor PRDs in organic HAP service using a device or monitoring system that is capable of identifying and recording the time and duration of each pressure release and of notifying operators that a release has occurred. For purposes of estimating the costs of this requirement, we assumed that operators would install electronic indicators on each PRD in organic HAP service that vents to the atmosphere to identify and record the time and duration of each pressure release. However, owners or operators could use a range of methods to satisfy these requirements, including the use of a parameter monitoring system that may

already have been in place (e.g., on the process and that is sufficient to notify operators immediately that a release is occurring, as well as recording the time and duration of the release).

Based on our cost assumptions that the most expensive approach will be used, the nationwide capital cost of installing these monitors is \$1.5 million, \$1.6 million and \$3.8 million for the PAI, PEPO and P&R IV source categories, respectively. The total annualized cost of installing and operating these monitors is \$222,000, \$242,000 and \$566,000 for the PAI, PEPO and P&R IV source categories, respectively. For a breakdown of the PAI, PEPO and P&R IV source category costs and other costing information, see the memorandum, *Revised Cost Impacts Associated with the Final Pressure Relief Device Monitoring Requirements for the Pesticide Active Ingredient Production, Polyether Polyols Production, and Group IV Polymers and Resins Source Categories*, available in the docket for this action (EPA-HQ-OAR-2011-0435).

B. What are the requirements for submission of performance test data to the EPA?

As stated in the proposal preamble (77 FR 1285, January 9, 2012), the EPA is taking a step to increase the ease and efficiency of data submittal and data accessibility. Specifically, the EPA is requiring owners or operators of PAI, PEPO and P&R IV facilities to submit electronic copies of certain required performance test reports.

As mentioned in the preamble of the proposal, data will be collected by direct computer-to-computer electronic transfer using EPA-provided software. As discussed in the proposal, the EPA-provided software is an electronic performance test report tool called the ERT. The ERT will generate an electronic report package that will be submitted to the Compliance and Emissions Data Reporting Interface (CEDRI) and then archived to the EPA's Central Data Exchange (CDX). A description and instructions for use of the ERT can be found at: <http://www.epa.gov/ttn/chief/ert/index.html> and CEDRI can be accessed through the CDX Web site: (www.epa.gov/cdx).

The requirement to submit performance test data electronically to the EPA does not create any additional performance testing and will apply only to those performance tests conducted using test methods that are supported by the ERT. A listing of the pollutants and test methods supported by the ERT is available at the ERT Web site. The EPA believes, through this approach,

industry will save time in the performance test submittal process. Additionally, this rulemaking benefits industry by cutting back on recordkeeping costs as the performance test reports that are submitted to the EPA using CEDRI are no longer required to be kept in hard copy.

As mentioned in the proposal preamble, state, local and tribal agencies may benefit from more streamlined and accurate review of performance test data that will be available on the EPA WebFIRE database. Additionally, performance test data will become available to the public through WebFIRE. Having such data publicly available enhances transparency and accountability. For a more thorough discussion of electronic reporting of performance tests using direct computer-to-computer electronic transfer and using EPA-provided software, see the discussion in the preamble of the proposal (77 FR 1285-1286, January 9, 2012).

In summary, in addition to supporting regulation development, control strategy development and other air pollution control activities, having an electronic database populated with performance test data will save industry, state, local, tribal agencies and the EPA significant time, money and effort while improving the quality of emission inventories and air quality regulations.

V. Summary of Significant Changes Since Proposal

A. What changes did we make to the risk assessments for these source categories since proposal?

Section 112(f)(2) of the CAA requires us to determine whether certain emission standards reduce risk to an acceptable level and, once we have ensured that the risk is acceptable, whether the standards provide an ample margin of safety to protect public health and prevent an adverse environmental effect. First, we determine whether there is an acceptable risk. The EPA generally presumes the risk is acceptable if the maximum individual risk (MIR) of cancer is no higher than 100-in-1 million. The EPA bases its overall judgment of acceptability on the MIR and a series of other health measures and factors. In some cases, these health measures and factors taken together may provide a more realistic description of the magnitude of risk in the exposed population than MIR alone. If the risk is unacceptable, the EPA must require additional controls, without consideration of cost, to ensure an acceptable level of risk. After determining that the level of risk is

acceptable, the EPA evaluates whether the standards provide an ample margin of safety to protect public health by considering costs and economic impacts of controls, technological feasibility and other relevant factors, in addition to those health measures and factors considered to determine acceptability. Considering all of these factors, the EPA ensures that the standard is set at a level that provides an ample margin of safety to protect public health, as required by CAA section 112(f).

At proposal, we conducted risk assessments that provided estimates of the MIR posed by the allowable and actual HAP emissions from each source in a category, the distribution of cancer risks within the exposed populations, cancer incidence, hazard index (HI) for chronic exposures to HAP with noncancer health effects and hazard quotient (HQ) for acute exposures to HAP with non-cancer health effects. We found that the residual risks to public health from all source categories subject to these three MACT standards were acceptable and, further, that the existing standards provided an ample margin of safety to protect public health and no adverse environmental effects were expected as a result of HAP emissions from these source categories. Thus, we proposed that no additional controls would be required to address such risks.

As a result of information received from commenters on the proposal, two additional facilities have been included in two of the P&R IV datasets. In addition, after proposal we asked several states to review the emissions data for the PAI, PEPO and P&R IV facilities in their states. This review resulted in the addition and removal of several facilities across the three MACT standards, as well as changes to numerous emission points in the dataset. More information on the changes made to the dataset as a result of this review can be found in the memorandum, *Emissions Data Used in Residual Risk Modeling: Pesticide Active Ingredient Production, Polyether Polyols Production, and Group IV Polymers and Resins*, available in the docket for this action (EPA-HQ-OAR-2011-0435). This updated dataset was used in the revised risk assessment for these source categories. A summary of the results of the revised risk assessment is provided below.

For the ABS source category, the MIR decreased from 30- to 20-in-1 million, the annual cancer incidence increased from 0.003 to 0.009 cases per year, the maximum chronic non-cancer TOSHI value increased from 0.2 to 0.3, and the maximum off-site acute HQ value decreased from 2 to 0.9, based on the

REL value for acetaldehyde. Table 3 provides an overall summary of the

revised inhalation risk assessment results for the ABS source category.

TABLE 3—ABS INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
6	20	20	95,000	0.009	0.3	0.3	HQ _{REL} = 0.9 acetaldehyde.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the ABS source category is the spleen.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

For the SAN source category, the MIR increased from 0.03- to 0.4-in-1 million, the annual cancer incidence increased from 0.000006 to 0.0003 cases per year, the maximum chronic non-cancer

TOSHI value increased from 0.0002 to 0.003, and the maximum off-site acute HQ value increased from 0.007 to 0.05, based on the REL value for methylene chloride. Table 4 provides an overall

summary of the revised inhalation risk assessment results for the SAN source category.

TABLE 4—SAN INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
3	0.4	0.4	0	0.0003	0.003	0.003	HQ _{REL} = 0.05 methylene chloride.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the SAN source category is the respiratory system.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

For the MBS source category, the MIR increased from 0.4- to 1-in-1 million, the annual cancer incidence increased from 0.00003 to 0.00009 cases per year, the

maximum chronic non-cancer TOSHI value increased from 0.007 to 0.02, and the maximum off-site acute HQ value increased from 9 to 10, based on the

ERPG-1 value for ethyl acrylate. Table 5 provides an overall summary of the revised inhalation risk assessment results for the MBS source category.

TABLE 5—MBS INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
2	1	1	220	0.00009	0.02	0.02	HQ _{ERPG-1} = 10 ethyl acrylate.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the MBS source category is the reproductive system.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

For the PS source category, the MIR decreased from 2- to 0.08-in-1 million,

the annual cancer incidence decreased from 0.00003 to 0.00001 cases per year,

the maximum chronic non-cancer TOSHI value increased from 0.004 to

0.006, and the maximum off-site acute HQ value stayed the same at 0.3, based

on the REL value for styrene. Table 6 provides an overall summary of the

revised inhalation risk assessment results for the PS source category.

TABLE 6—PS INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
10	0.08	0.08	0	0.00001	0.006	0.006	HQ _{REL} = 0.3 styrene.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the PS source category is the neurological system.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

For the PET source category, the MIR increased from 9- to 10-in-1 million, the annual cancer incidence stayed the same at 0.002 cases per year, the

maximum chronic non-cancer TOSHI value decreased from 0.5 to 0.4, and the maximum off-site acute HQ value decreased from 8 to 4, based on the REL

value for acetaldehyde. Table 7 provides an overall summary of the revised inhalation risk assessment results for the PET source category.

TABLE 7—PET INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
13	10	10	2,300	0.002	0.4	0.4	HQ _{REL} = 4 acetaldehyde.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the PET source category is the respiratory system.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

For the PAI source category, the MIR decreased from 7- to 6-in-1 million, the annual cancer incidence decreased from 0.001 to 0.0006 cases per year, the maximum chronic non-cancer TOSHI

stayed the same at 0.7, and the maximum off-site acute HQ value decreased from 8, based on the REL value for ethylene glycol ethyl ether, to 1, based on the REL value for

formaldehyde. Table 8 provides an overall summary of the revised inhalation risk assessment results for the PAI source category.

TABLE 8—PAI INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
18	6	7	370	0.0006	0.7	4	HQ _{REL} = 1 formaldehyde.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the PAI source category is the respiratory system.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

For the PEPO source category, the MIR stayed the same at 30-in-1 million, the annual cancer incidence stayed the same at 0.02 cases per year, the

maximum chronic non-cancer TOSHI value decreased from 0.8 to 0.7, and the maximum off-site acute HQ value decreased from 6 to 4, based on the REL

value for acrolein. Table 9 provides an overall summary of the revised inhalation risk assessment results for the PEPO source category.

TABLE 9—PEPO INHALATION RISK ASSESSMENT RESULTS

Number of facilities ¹	Maximum individual cancer risk (in 1 million) ²		Population at risk $\geq$ 1-in-1 million	Annual cancer incidence (cases per year)	Maximum chronic non-cancer TOSHI ³		Maximum off-site acute non-cancer HQ ⁴
	Actual emissions level	Allowable emissions level			Actual emissions level	Allowable emissions level	
23	30	30	140,000	0.02	0.7	0.7	HQ _{REL} = 4 acrolein.

¹ Number of facilities evaluated in the risk analysis.

² Maximum individual excess lifetime cancer risk.

³ Maximum TOSHI. The target organ with the highest TOSHI for the PEPO source category is the respiratory system.

⁴ The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When HQ values exceed 1, we also show HQ values using the next lowest available acute dose-response value.

The results of the revised risk assessment did not significantly change the maximum risk levels to the most exposed individual for these source categories and did not affect our determinations regarding risk acceptability and ample margin of safety. The full results of the revised risk assessment for the source categories can be found in the risk assessment documentation available in the docket for this action (EPA-HQ-OAR-2011-0435).

Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for the source categories addressed in these final rules. Although uncertainty exists, we believe that our approach, which used conservative tools and assumptions, ensures that our decisions are health-protective. A discussion of the uncertainties in the emissions datasets, dispersion modeling, inhalation exposure estimates and dose-response relationships is provided in the preamble to the proposed rule. See 77 FR 1280–1282 (January 9, 2012).

B. What changes did we make to the affirmative defense provisions since proposal?

We proposed a 2-day notification requirement for asserting an affirmative defense in 40 CFR 63.1310(k) of subpart JJJ, 40 CFR 63.1360(k) of subpart MMM and 40 CFR 63.1420(i) of subpart PPP. Consistent with other recent actions by the EPA (e.g., NESHAP for Polyvinyl Chloride and Copolymers Production (77 FR 22848, April 17, 2012)), we have revised these sections in the final rules to allow an owner or operator of the affected source seeking to assert an affirmative defense, after experiencing an exceedance of its emission limit(s) or a violation of an emission standard during a malfunction, to submit a written report to the Administrator. The owner or operator may submit this report in the first periodic compliance report, deviation report or excess

emissions report otherwise required after the initial occurrence of the violation of the relevant standard. However, if the next report is due less than 45 days after the violation, the affirmative defense report may be included in the next report after that. This change provides sources with sufficient time to demonstrate that they have met the required affirmative defense criteria. In addition, we have revised the affirmative defense provisions to clarify that these provisions are applicable where there have been “violations of emission standards,” rather than “excess emissions,” during malfunctions.

C. What changes did we make to the PRD provisions since proposal?

We have clarified in each of the three MACT standards that new affected sources that commenced construction or reconstruction on or before January 12, 2012, and existing affected sources have three years to comply with the PRD monitoring requirements. We proposed that facilities subject to these MACT standards would have to install a release indicator on each PRD in organic HAP service that releases to the atmosphere. In the final rules, we have revised this requirement so that facilities may comply with these requirements using existing parameter monitoring systems that notify operators immediately when a pressure release occurs. In the proposal, we proposed that a release to the atmosphere from a PRD was a violation of the rule. In the final rule, we have clarified that a pressure release to the atmosphere from a PRD in organic HAP service is prohibited.

D. What changes did we make to the Group IV Polymers and Resins MACT standards since proposal?

The final rule P&R IV amendments take into account startup and shutdown periods by establishing alternative compliance demonstration methods for meeting standards for continuous

process vents during startup and shutdown periods.

We are also amending 40 CFR 63.14 to add the test methods incorporated by reference for the technical standards we are finalizing for the PCCT at the one Group IV Polymers and Resins facility in the PET continuous TPA high viscosity multiple end finisher subcategory.

E. What changes did we make to the Pesticide Active Ingredient Production MACT standards since proposal?

The final rule PAI amendments provide an alternative monitoring option for packed-bed scrubbers that allows the measurement of the liquid-to-gas ratio (according to 40 CFR 63.994(c)) in lieu of the scrubber liquid flow rate or pressure drop.

We are also revising the definition of “pesticide active ingredient” to reflect changes made to EPA Form 3540–16, subsequent to the promulgation of the MACT standards. The revised definition clarifies that PAI materials are identified by product classification codes used to represent PAIs, and are the same codes used in block 19 of the 1999 version of EPA Form 3540–16, the Pesticides Report for Pesticide-Producing Establishment.

F. What changes did we make to the Polyether Polyols Production MACT standards since proposal?

The final rule PEPO amendments have not been changed since proposal.

G. What other changes did we make since proposal?

We have revised the language of the PEPO and P&R IV MACT standards to require quarterly reporting only when there have been repeat excursions for the same equipment in consecutive semiannual reporting periods. Excursions can result from monitoring parameter levels being outside established ranges or from a lack of sufficient data to determine compliance

with the emission limits. These excursions are considered violations of the standards and must be reported in the semiannual report. While we proposed to remove the one excursion per semiannual reporting period allowance from these subparts, this would result in facilities being required to perform quarterly reporting for the affected source if any point at that affected source experienced an excursion. This would be overly burdensome for both the facility and the reviewing agency and was not the intention of the original MACT standards. To remedy this situation, we are finalizing the removal of the one-excursion-per-semiannual-reporting-period allowance, but revising the reporting requirements to require quarterly reporting only when there have been repeat excursions for the same equipment in consecutive semiannual reporting periods. This will ensure enhanced reporting is carried out only for equipment with potential compliance issues.

For each NESHAP, we have also clarified the requirements for Precompliance Reports/Plans where an initial Precompliance Report/Plan is needed after the compliance date for the rule. Since a Precompliance Report/Plan is only required where certain compliance options are chosen or alternative compliance options are being requested, not all existing sources would have submitted a Precompliance Report/Plan prior to the compliance date and not all new sources would have submitted one with the application for construction or reconstruction. The revisions added today clarify that sources may submit a Precompliance Report/Plan to request alternative compliance options after the compliance date has passed or construction or preconstruction applications have already been submitted.

In addition, we have also made several technical corrections for each NESHAP. These amendments are being finalized to correct inaccuracies and oversights that were previously promulgated.

VI. Significant Public Comments and Rationale for Changes to the Proposed Rule

We received written comments from 21 commenters during the comment period and three comment letters after the close of the comment period. The following is a summary of the significant comments received and our responses to these comments. The complete list of comments received and our responses to those comments can be

found in the Response to Comments document available in the docket for this action (EPA-HQ-OAR-2011-0435).

For the purposes of this document, the text within the comment summaries was provided by the commenter(s) and represents their opinion(s), regardless of whether the summary specifically indicates that the statement is from a commenter(s) (e.g., "The commenter states" or "The commenters assert"). The comment summaries do not represent the EPA's opinion unless our response to a comment expressly agrees with all of the comment or the relevant portion of that comment.

A. Pressure Relief Device Monitoring Requirements

Comment: Several commenters stated that the EPA had not provided factual evidence or adequate justification for requiring control of emissions from PRDs. One commenter argued that the EPA provided no data to support the claim that a large number of releases occur and may emit large quantities of HAP, or to support the contention that releases are not being identified. Other commenters stated that the EPA had not conducted this portion of the rulemaking according to the procedures set out by the CAA for the establishment of MACT standards. Commenters added that they did not believe that the EPA has a legal obligation nor the discretion to promulgate the proposed PRD provisions because the PRD monitoring and reporting requirements were not derived from the technology reviews, in response to any residual risks detected, or the D.C. Circuit's invalidation of the SSM provisions in the 40 CFR Part 63 General Provisions. Some commenters opined that since the MACT standards were established without consideration of PRD emissions, it is inappropriate for the EPA to state that emissions from PRDs violate the MACT standards.

Response: Under CAA section 112(d)(2), the EPA must promulgate technology-based standards that reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts), and such standards must contain compliance assurance provisions to make sure that they are practicably enforceable. Nothing in the CAA or its legislative history suggests that the EPA is prohibited from reviewing and revising MACT standards and their compliance assurance provisions, except as part of the CAA section 112(d)(6) or CAA section 112(f) reviews or an action taken in response to a ruling by a court. The amendments being finalized for PRD

releases do not impose new emission standards for which a MACT analysis is required by the CAA. Instead, they prohibit releases to the atmosphere from PRDs in organic HAP service that are no longer appropriate following the 2008 *Sierra Club v. EPA* ruling, and impose additional monitoring requirements to address potential releases.

As noted in a report prepared by the SCAQMD, releases from PRDs occur randomly and the emissions can only be approximated. Based on their analysis of refinery PRD reports of PRD releases from 9 facilities in their district, there were 8 PRD releases from 2003 to 2006 that were estimated to release greater than 2,000 lbs of emissions to the atmosphere, and 8 PRD releases from 2003 to 2006 that were estimated to release between 500 and 2,000 lbs of emissions to the atmosphere.⁵ The SCAQMD analysis focuses on volatile organic compound (VOC) emissions (which would also include organic HAP emissions). Additionally, the Texas Commission on Environmental Quality Emission Event Reporting Database is populated with Emission Event Reports from both the refinery and chemical sectors where the reason for the report was due to a PRD release.⁶ These final amendments simply prohibit PRD releases to the atmosphere and require that these devices now be monitored to indicate when these releases occur and be reported, so that HAP emissions that may potentially occur from releases can be mitigated as soon as possible. Additionally, the final rule requirement to report PRD releases ensures that these releases will be reported nationally and not just in some states.

An agency generally remains free to revise previously promulgated rules to correct newly identified problems, even in the absence of a remand from a Court. *United Gas Improvement Co. v. Callery Props., Inc.*, 382 U.S. 223, 229 (1966). In light of, and consistent with, the 2008 *Sierra Club v. EPA* ruling, the EPA is eliminating the SSM exemption in the PAI, PEPO and P&R IV MACT standards and requiring that the standards in these rules apply at all times, including during periods of SSM. In addition, in order for our treatment of malfunction-caused pressure releases to the atmosphere to conform with the reasoning of the Court's ruling, the final rule adds a provision stating that HAP

⁵ See "Final Staff Report for Proposed Amended Rule 1173--Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants." Planning, Rule Development and Area Sources, South Coast Air Quality Management District. May 15, 2007.

⁶ See <http://www11.tceq.texas.gov/oce/eei/index.cfm>.

emissions releases to the atmosphere from PRDs in organic HAP service are prohibited. To prohibit these malfunction-caused releases, it is not necessary for us to set an emission standard that is based on a MACT floor or beyond-floor analysis (see section IV.A of this preamble); indeed, the EPA has consistently explained that we are not required to take malfunctions into account in setting standards or to devise standards that apply specifically to malfunction-caused emissions, such as PRD releases that cause HAP emissions *only* during malfunctions. However, based on comments received, we have modified the PRD monitoring provisions in the final rule. The final rule includes detection and pressure release management requirements that can be used by facilities to mitigate emissions during pressure release events from PRDs while allowing owners or operators greater flexibility based on their current equipment and operations. The final rule requires that sources monitor PRDs using a system that is capable of identifying and recording the time and duration of each pressure release and of immediately notifying operators that a release is occurring. As with any malfunction event, an affirmative defense against civil penalties would be available for a PRD release to the atmosphere if the facility can prove the elements of that defense.

Comment: Several commenters reported that there are other approaches for monitoring PRDs, including continuous monitoring of process parameters, noting that many companies have process control computer systems that already have alarms to notify the operator of deviations from normal operations and automatically adjust process operations to prevent upsets. One commenter suggested that pressure relief valves with an upstream rupture disc should be considered to have adequate monitoring already because there is pressure monitoring of the space between the two. The commenter also suggested that monitoring of ambient air within the vicinity of a process for leaks be considered a valid alternative, as this would provide reasonable assurance that the opening of a relief device would be noticed.

Another commenter opined that the EPA had not provided any information about the reliability or suitability of the wireless indicators on which the EPA based its PRD monitoring cost estimates. The commenter stated that the wireless indicators assumed in the cost analysis are similar to the "Burst Alert Sensors" used at one of the commenter's facilities. The commenter notes these devices have limited applicability, such

as an 8-inch maximum pipe diameter, and -40 °F to 185 °F temperature range, and the EPA has not provided any data or information on the use or reliability of these devices in chemical plants or the more specific types of facilities in the source categories addressed by the proposed rule. The commenter noted these monitors exhibit a high false alarm rate and issues in areas where freezing occurs.

Commenters also expressed that the EPA provided no information in the proposed rule about which devices and types of data are acceptable for determining the duration of a PRD opening.

Response: Based on technological and cost concerns expressed by industry, we have reassessed the proposed requirement to prescribe the use of release indicators and alarms for each PRD. We acknowledge that there are other valid and potentially less costly approaches for monitoring PRDs and determining when a pressure release from a PRD has occurred for the PAI, PEPO and P&R IV source categories. As there are other approaches we believe to be equally effective (and potentially more reliable under certain circumstances for these source categories) as the proposed indicators and alarms, we have added flexibility in the rules. The final rules allow each PRD in organic HAP service to be equipped with a device or system that is capable of identifying and recording the time and duration of each pressure release (e.g., rupture disk indicators, magnetic sensors, motion detectors on the pressure relief valve stem, flow monitors, and pressure monitors) in lieu of prescribing that PRDs be equipped with release indicators and alarms.

Comment: Several industry commenters stated that the EPA did not consider the burden of data collection from PRD monitors, operation and maintenance costs or the costs of installing electronic indicators for every pressure relief valve. Commenters also opined that the cost estimates that the EPA used (\$5,000 to \$10,000) for the cost of the proposed PRD monitoring units at proposal were low and provided PRD monitoring unit cost estimates ranging from \$14,000 to \$30,000 per unit. One commenter stated that the costs cited by the EPA are for wireless monitors only and that there may be cases where more expensive wired connections would be necessary. One commenter opined that the EPA's estimate of \$1,409 per PRD monitoring unit was lower than the SCAQMD document cited by the EPA (which includes costs ranging from \$5,000 to \$10,000 per PRD monitoring unit).

A few commenters asserted that the EPA underestimated the number of PRDs that would be subject to PRD monitoring requirements for some facilities and companies. One commenter estimated that one of their facilities had 122 PRDs and one company reported an estimated 300 PRDs for their 2 facilities that would be subject to the proposed MACT standards.

One commenter stated that, based on historical PRD emissions release data from 2009 to 2011 at the facilities of the commenter's company, there was one release event of 25 pounds. The commenter asserted that, considering these emissions data, their estimated cost of the proposed PRD monitoring requirements would be approximately \$73,000/pound emissions released.

Response: As noted above, based on comments received at proposal we reassessed both our cost analysis and PRD monitoring requirements. The final rules have been amended to allow each PRD in organic HAP service to be equipped with a device or system that is capable of identifying and recording the time and duration of each pressure release (e.g., rupture disk indicators, magnetic sensors, motion detectors on the pressure relief valve stem, flow monitors, and pressure monitors) in lieu of prescribing that PRDs be equipped with release indicators and alarms.

Although we are adding flexibility to the monitoring options an owner or operator has for PRD releases for these source categories in the final rule amendments, we maintained, for the purposes of costing, that owners and operators would install electronic indicators on each relief device that vents to the atmosphere to identify releases when they occur. We recognize that facility operations and configurations will vary for differing facilities based on the number of PRDs in operation at a given facility and have attempted to address those variances in our revised costs.⁷ This would amount to approximately \$1,409 per PRD. We have revised the estimate of PRD system costs based on an estimated cost per PRD monitoring device combined with source-category specific estimates of the number of PRDs. Based on a report prepared by the SCAQMD, the total cost of a PRD monitoring device is estimated

⁷ See "Revised Cost Impacts Associated with the Final Pressure Relief Device Monitoring Requirements for the Pesticide Active Ingredient Production, Polyether Polyols Production, and Group IV Polymers and Resins Source Categories." Memorandum from EC/R Incorporated to Nick Parsons, U.S. Environmental Protection Agency, January 31, 2014. (Docket ID No. EPA-HQ-OAR-2011-0435.)

to be in the range of \$5,000 to \$10,000 (2007 dollars).⁸ For our analysis, we assumed the PRD monitoring device to cost in the midpoint of the range (\$7,500 [2007 dollars]), and we adjusted that cost to 2012 dollars (\$8,345). Assuming a 10 year equipment life and 7% interest, the annualized PRD monitoring device cost is estimated to be approximately \$1,185. At proposal, as one commenter acknowledges, we adopted an average facility cost of a PRD monitoring system, assuming 134 PRDs, to be \$188,913 based on analyses performed for the proposed standards for the Polyvinyl Chloride and Copolymers source category.⁹ Based on PRD data and models that we have developed for the PAI, PEPO and P&R IV source categories, most facility operations subject to these source categories are anticipated to have less than 76 PRDs. Based on this information, we have adjusted our PRD monitoring system costs to range from an estimated \$69,233 to \$112,180 for these source categories, and the annualized monitoring system capital cost estimates per facility range from \$9,800 to \$15,900 for these source categories.¹⁰ Although our proposed and revised costs may be low for some facilities, the costs will likely be an overestimate for other facilities. Additionally, by allowing facilities the option to monitor parameters in order to detect PRD releases, we believe that our revised costs are conservative in that they reflect the upper range of our estimated PRD monitoring system costs per source category and presume that sources will choose to install electronic indicators and alarms versus complying with the rule by using parameter monitoring. However, it is highly likely that many sources will choose to install or use existing parameter monitoring systems (and not electronic indicators and alarms), and the cost of such a system would likely be less than the costs estimated for the use of electronic indicators and alarms.

Cost-effectiveness numbers are estimated to evaluate the benefit of implementing a control measure; the final PRD monitoring requirements, although likely to result in a reduction in HAP emissions from the affected facilities, are being required to ensure continuous compliance with existing

emission standards. Therefore, while we consider the costs of this monitoring technology to be reasonable, a cost-effectiveness analysis that would be appropriate for a new emission standard imposing new control requirements to reduce HAP emissions by an estimable amount was not considered for this monitoring requirement. We have prohibited releases from PRDs because we believe it is inconsistent with the *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008) ruling. We consider PRD releases to be malfunctions and acknowledge these releases do not occur frequently and in specific cases may or may not result in significant releases to the atmosphere.

B. Startup and Shutdown Periods

Comment: Two commenters requested that the EPA provide a means to demonstrate compliance during startup and shutdown periods, including the establishment of work practices for subpart JJJ. The commenters stated that while emissions during startup and shutdown may not be higher than during normal operations, it may not be possible to demonstrate compliance with the emission limits for these specific periods. The commenters argued that, for units complying with a unit of mass emitted per unit of product produced or destruction efficiency standard, demonstrating compliance is problematic as production approaches zero. One commenter suggested a long averaging time, such as 30 days, be incorporated to resolve this problem. Commenters also suggested that a work practice standard could be established for these periods to require emissions during startup and shutdown be routed to an operating control device that has been demonstrated to achieve the required destruction efficiency or that facilities be allowed to demonstrate compliance by showing that control device operating parameters are maintained at a level that has been demonstrated to meet standards during continuous steady-state conditions.

One commenter asserted that the EPA cannot speculate that facilities can meet the normal operations emissions limitation during periods of startup and shutdown and must conduct a thorough analysis of emissions from the best performing sources during startup and shutdown and base the standards on the results of that analysis.

Response: We do not agree with commenters that alternative work practice standards should be established for P&R IV continuous process vents during startup and shutdown periods. The existing rule includes flexible continuous process vent control

compliance options. Current regulations allow owners or operators to comply by meeting a production based limit, reducing emissions by 98 percent in a combustion device or to a concentration of 20 parts per million by volume (ppmv) on a dry basis (whichever is less stringent); combust the emissions in a boiler or process heater with a specified design heat input capacity or by introducing emissions into the flame zone; or combust emissions in a flare meeting specification requirements. Nonetheless, alternative compliance demonstration method options for meeting production-based limits are included in the final rule to address commenters' concerns regarding meeting production-based limits as production approaches zero. The final rule allows owners or operators to demonstrate compliance with continuous process vent production-based limits during startup and shutdown periods by either: (1) Keeping records that establish the raw material feed rate and production rate were both zero; (2) meeting the limit by dividing the emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero; or (3) keeping records that establish the operating parameters of the control device used to comply with the rule were maintained at the level established to meet the emission limit at maximum representative operating conditions. We believe the addition of the alternative compliance demonstration method options for startup and shutdown periods addresses commenters' concerns while meeting the intended emission reduction requirements.

We disagree with the commenter that claimed the EPA should have performed a more thorough analysis of emissions during periods of startup and shutdown prior to proposal, as at that time we did not have information to suggest that sources could not meet the emission standards during these times. It is only as a result of commenter input that the EPA was made aware of potential issues with compliance during periods of startup and shutdown for sources subject to the P&R IV MACT standards, and, as previously stated, we have revised the final rule to account for these periods.

C. P&R IV Equipment Leak and PCCT Provisions for Previously-Unregulated Sources

Comment: One commenter argued that the EPA does not have the authority to reconsider previously-issued MACT standards. The commenter states that

⁸ See footnote 5.

⁹ See "Costs and Emission Reductions of the Proposed Standards for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category." Memorandum from Eastern Research Group, Inc. to Jodi Howard, U.S. Environmental Protection Agency. April 13, 2011. (Docket Item No. EPA-HQ-OAR-2002-0037-1002.)

¹⁰ See footnote 7.

the EPA cannot reconsider aspects of previously issued MACT standards unrelated to "development in practices, processes, and control technologies," under CAA section 112(d)(6). The commenter also states the EPA cannot change its mind about what standards are required to comply with CAA section 112(d)(2) and (3), nor recalculate a floor based on subsequent performance. The commenter adds that reassessing MACT standards and imposing more stringent requirements would also be inconsistent with Congress's desire for finality evident in the judicial review provisions of CAA section 307(b), which provides that challenges to MACT standards must be raised within 60 days of their promulgation, assuring that regulated entities, the EPA, and the public know what emissions limitations will apply to a source rather than having those limitations be subject to flux. The commenter states that even if the EPA had the authority to change the existing MACT standards, it could not reasonably make the revised standards effective immediately. The commenter notes that CAA section 112(i) allows for a compliance deadline of up to 3 years.

Response: In *Medical Waste Institute v. EPA*, 645 F. 3d 420, 425–27 (D.C. Cir. 2011), the D.C. Circuit held that the EPA may permissibly amend prior MACT determinations, including amendments to improperly promulgated floor determinations, using its authority under CAA section 129(a)(2), which is analogous to the authority in CAA section 112(d)(2) and (3). The lack of judicial invalidation on these issues is a distinction without a difference. *National Lime*, 233 F. 3d at 633–34; see also *Medical Waste Institute*, 645 F. 3d at 426 (resetting MACT floor, based on post-compliance data, permissible when originally-established floor was improperly established, and permissibility of the EPA's action does not turn on whether the prior standard was remanded or vacated). See also our response in section VI.A above. The D.C. Circuit's decision in *Portland Cement Ass'n v. EPA*, 665 F.3d 177, 189 (D.C. Cir. 2011) confirms the EPA is not constrained by CAA section 112(d)(6) and it may reassess its standards more often, including revising MACT floors pursuant to section 112(d)(2) and (d)(3). The commenter is thus incorrect that the EPA lacks authority to set MACT standards under 112(d)(2) and (d)(3) for PCCT and equipment leaks from the PET continuous TPA high viscosity multiple end finisher subcategory that were not controlled under the initial P&R IV MACT standards. Put another

way, if the EPA did not adopt a proper MACT standard initially, it is not amending a MACT standard but adopting one for the first time. That is the case here for PCCT and equipment leaks from the PET continuous TPA high viscosity multiple end finisher subcategory that were not controlled under the initial P&R IV MACT standards. The EPA adopted no MACT standard for these emission points, an approach soundly rejected by the D.C. Circuit in *National Lime*, 233 F. 3d at 633–34. Consequently, the EPA is not barred from making MACT floor and beyond-the-floor determinations and issuing MACT standards pursuant to CAA section 112(d)(2) and (3) in this rulemaking.

The EPA is not invoking CAA section 112(d)(6) or 112(f)(2) as its authority to promulgate the MACT standards for currently uncontrolled sources. Rather, the EPA is promulgating these MACT standards for the first time pursuant to sections 112(d)(2) and (3), the provisions that directly govern the promulgation of MACT standards. Using CAA sections 112(d)(2) and (3) ensures the process and considerations are those associated with initially establishing a MACT standard. Contrary to the commenter's assertion that the EPA conducted new MACT floor analyses for standards currently in effect in setting MACT standards to address certain unregulated sources, the EPA is not establishing these MACT standards under section 112(d)(6). As explained above, the EPA is promulgating new standards, not reevaluating the original standards, under CAA sections 112(d)(2) and (3). The EPA's action to set MACT standards for PCCT and equipment leaks from the PET continuous TPA high viscosity multiple end finisher subcategory, which were not regulated in the original MACT standards, is consistent with several recent rulemakings, in which we have addressed underlying defects or made other necessary revisions or clarifications in existing NESHAP under sections 112(d)(2) and (3), the provisions that directly govern the initial promulgation of MACT standards (see National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries, October 28, 2009, 74 FR 55670; and National Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins; Marine Tank Vessel Loading Operations; Pharmaceuticals Production; and the Printing and Publishing Industry, April 21, 2011, 76 FR 22566).

The EPA proposed setting MACT standards for the first time for equipment leaks from the PET

continuous TPA high viscosity multiple end finisher subcategory that were left unregulated in the original NESHAP. Establishing standards for these emission points does not involve developing a new MACT floor analysis for MACT standards currently in effect. In the original NESHAP, the EPA exempted sources producing PET using a continuous TPA high viscosity multiple end finisher process from the requirements for equipment leaks. The EPA established MACT standards for the other P&R IV source categories, but left unregulated this subcategory of PET production. Therefore, the EPA is establishing for the first time MACT standards for the PET continuous TPA high viscosity multiple end finisher subcategory. Based on available data on the PET continuous TPA high viscosity multiple end finisher subcategory, the EPA performed the MACT floor and beyond-the floor analyses to determine the MACT standards for this subcategory. In doing so, the EPA did not reanalyze the MACT floor analysis for the standards established in the original NESHAP for the other P&R IV source categories.

Regarding the proposed MACT standards under CAA section 112(d)(2) and (3) for PCCT from the PET continuous TPA high viscosity multiple end finisher subcategory, the EPA originally promulgated standards for this emission point in the original P&R IV MACT standards. However, these standards were a beyond-the-floor option and were subsequently stayed indefinitely. Based on available data on the PET continuous TPA high viscosity multiple end finisher subcategory, the EPA performed the MACT floor and beyond-the floor analyses to determine the MACT standards for this subcategory. The EPA then proposed to re-set the previously stayed MACT standard as an emission standard that reflects the MACT floor option. In doing so, the EPA did not reanalyze the MACT floor analysis for the standards established in the original NESHAP for the other P&R IV source categories.

Comment: One commenter opined that the work practice equipment leak provisions the EPA proposed for PET sources using a continuous TPA high viscosity multiple end finisher are unacceptable and that the EPA should set a no-leak standard since leak-less valves are available. The commenter asserted that the EPA has not demonstrated it is not technologically or economically practicable to measure and control fugitive emissions numerically, as required under section 112(h). The commenter stated that the EPA must at least investigate

measurement techniques, such as remote sensing, before reaching the conclusion that only work practice standards are "feasible." The commenter urged the EPA to set both numerical and work practice standards for equipment leaks. The commenter also stated that under section 112(d)(2) the EPA must consider requiring facilities to enclose systems or processes to eliminate emissions and requiring capture of fugitive emissions, which it has not done. The commenter opined that the EPA must use the most up-to-date leak detection and repair (LDAR) practices used in similar industries if the EPA determines that LDAR practices are the only way to control such emissions. The commenter also says that the EPA must set an absolute limit on how much of the equipment can be allowed to leak.

Response: We disagree with the commenter that the equipment leak standard set for PET sources using a continuous TPA high viscosity multiple end finisher is inappropriate. This source of emissions was previously unregulated by the MACT standards, and we have established standards for these emissions for the first time. Following the procedures of CAA section 112(d)(2) and (3), we established the MACT floor based on the best performing facilities in the source category or subcategory. As there is only one facility in this source subcategory, the current practices at the facility represent the best performing facility in the subcategory and the MACT floor. We performed a beyond-the-floor analysis to consider other technology available, including the LDAR program required by the Hazardous Organic NESHAP (HON), which is the required level of control for other facilities subject to the P&R IV MACT standards, and found this program to not be cost effective. See the memorandum, *Re-Evaluation of Equipment Leak Emissions and Costs at PET Facilities*, available in the docket for this action (Docket Item No. EPA-HQ-OAR-2011-0435-0059). We believe the HON LDAR program represents the most feasible and cost-effective beyond-the-floor option, as anything with more stringent requirements or more expensive equipment would only further increase the costs relative to the emission reductions. This was demonstrated in our analysis of leak-less valves performed as part of the ample margin of safety analysis for the PET source category, which showed very high costs relative to emission reductions for facilities that already have the HON LDAR program in place (see the

memorandum, *Impacts of Control Options to Address Residual Risks for the Pesticide Active Ingredient, Polyether Polyols, and Polymers and Resins IV Production Source Categories*, available in the docket for this action (Docket Item No. EPA-HQ-OAR-2011-0435-0006)). In addition, as explained in the preamble to the proposed rule (77 FR 1293), the established work practice standards are consistent with CAA section 112(h). Applying a measurement methodology to this class of sources is not technologically and economically feasible due to the number of openings and possible emission points, and because the fugitive emissions cannot be routed to a conveyance designed to capture such emissions. See the memorandum, *Re-Evaluation of Equipment Leak Emissions and Costs at PET Facilities*, available in the docket for this action (Docket Item No. EPA-HQ-OAR-2011-0435-0059). We also note that the EPA is not permitted to set both a numerical and work practice standard for an emission point. A work practice standard may only be established when it is not technologically and economically feasible to establish a numerical emission standard. See CAA section 112(h).

D. Technology Review

Comment: One commenter asserted the EPA did not show that it looked for improvements in any of the technologies reviewed under section 112(d)(6), and noted several such improvements. These improvements include leak-less valves, seal-less pumps, welded connections, and the use of passive optical gas imaging (OGI) devices to reduce equipment leaks. The commenter also stated that the EPA should also require lower leak definitions of 100 ppm for valves, connectors and other equipment; 500 ppm for pumps, compressors, and pressure relief valves; tighter repair timelines of minimization of leaks within 24 hours of identification and repairs within seven days; and repairs using the best available technologies for frequent or high emissions leakers, all of which are the requirements in the California Bay Area Air Quality Management District and the South Coast Air Quality Management District. For other emission sources, the commenter opined that the EPA must prohibit flaring and require complete capture through flare gas recovery systems because it is widely believed that flares do not reduce HAP emissions to the level previously understood and flares create new toxic air emissions. The commenter asserted the EPA should

also require the use of remote sensing technology as a routine matter for all current sources, considering a 2009 report showing reductions from the Texas Petrochemicals Houston plant using this technology. The commenter further asserted the EPA must consider developments noted in a 2008 report by the Environmental Integrity Project and other authors for control of fugitive emissions from storage tanks and wastewater and improved monitoring and repair for tanks.¹¹

Response: In our CAA section 112(d)(6) review of pre-existing standards, we consider both improvements in practices, processes or control technologies that we may have previously considered, as well as practices, processes or control technologies that are new, or were unknown to us when the original MACT standards were developed. Because incremental changes in the practices, processes or control technologies can have a significant impact on emissions, these changes are considered in our analysis of whether to revise the MACT standards under CAA section 112(d)(6). In considering both existing and new practices, processes and control technologies, we consider costs and other factors in determining whether it is "necessary" to revise the existing standard.

The commenter suggested we analyze "leak-less" technologies such as leak-less valves, seal-less pumps, and welded connections. Packing combinations for valves and gaskets for flanges that significantly reduce emissions are in place in some facilities, particularly oil refineries. Facilities and packing manufacturers have created emission testing protocols for low leak packing in order to study and test their effectiveness.¹² Costs for leak-less valves were previously estimated for the synthetic organic chemical manufacturing industry (SOCMI).¹³ Using these estimates, we analyzed the costs associated with requiring leak-less valve technology for each of these

¹¹ See "Houston, We Have a Problem—A Roadmap for Reducing Petrochemical Industry Toxic Emissions in the Lone Star State." Galveston-Houston Association for Smog Prevention, Industry Professionals for Clean Air, Environmental Defense Fund, and Environmental Integrity Project. May 2008.

¹² See "Analysis of Emission Reduction Techniques for Equipment Leaks." Memorandum from C. Hancy, RTI International, to Jodi Howard, U.S. Environmental Protection Agency. December 21, 2011. (Docket Item No. EPA-HQ-OAR-2010-0869-0029).

¹³ See "National Emission Standards for Hazardous Air Pollutants for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry: Proposed Rule." 71 FR 34422, June 14, 2006.

source categories. Annual costs per source category ranged from \$1.3 million/yr to \$30.1 million/yr per facility for each of the source categories, with total capital investments ranging from \$9.2 million to \$220 million. Emission reductions were assumed to be 100 percent and ranged from 5.2 to 123.4 tpy of HAP per source category, resulting in a cost effectiveness of \$244,000/ton HAP. We do not consider this cost effectiveness to be reasonable and, as a result, do not consider leak-less valves to be economically feasible.

The commenter suggested we evaluate seal-less pump and welded connections. However, we do not have cost information that can be used to estimate costs for these technologies and the commenter did not provide such costs.

The commenter suggested we evaluate OGI devices as an advancement in technology. We note that the General Provisions for NESHAP at 40 CFR 63.11(c) through (e) already allows the use of OGI as an alternative work practice (AWP) to the traditional LDAR monitoring program (e.g., EPA Method 21). Section 63.11(c) through (e) allows the use of OGI along with an annual EPA Method 21 survey of all of the equipment.

We conducted a technology review to assess lowering the leak definition for valves to the 100 ppm level used by Bay Area Air Quality Management District (BAAQMD).¹⁴ We evaluated the incremental cost effectiveness between retaining the leak definition of 500 ppm (as proposed) and a leak definition of 100 ppm. According to our analysis, the incremental cost effectiveness for all three source categories ranged from \$16,000/ton HAP to \$18,000/ton HAP. We do not consider this to be cost effective. In our technology review, we also evaluated the BAAQMD program for tightening the repair timeline for components awaiting repair.¹⁵ According to our analysis, the cost effectiveness for all three source categories ranged from \$11,000/ton HAP to \$99,000/ton HAP. We do not consider this to be cost effective. As a result, the final rule retains the leak definition for valves of 500 ppm and the current repair schedule, as proposed.

Also, as a part of our technology review, we conducted an analysis to determine the economic feasibility of

lowering the leak definition for pumps to 500 ppm, as compared to the current leak definition of 2,000 ppm.¹⁶ We evaluated the incremental cost effectiveness between retaining the leak definition of 2,000 ppm (as proposed) and a leak definition of 500 ppm. According to our analysis, the incremental cost effectiveness for all three source categories was \$29,000/ton HAP. We do not consider this to be cost effective and, as a result, the final rule retains the leak definition for pumps of 2,000 ppm.

The commenter suggested that we evaluate lowering the leak definition for pressure relief devices to 500 ppm. For all three source categories, the existing requirements for pressure relief devices already specify operation with no detectable emissions, defined as an instrument reading above 500 ppm.

We are not at this point able to agree with the premise underlying the commenter's suggestions that flaring should be entirely prohibited in the subject source categories in favor of complete capture through flare gas recovery systems. As further discussed elsewhere, the EPA is currently studying the performance of flares to control HAP emissions, and we do not yet have sufficient performance data for the PAI, PEPO and P&R IV source categories. Therefore, we are not at this time prepared to finalize any changes to the currently applicable regulations pertaining to the performance of flares in the PAI, PEPO, and P&R IV source categories, including prohibiting flaring in favor of complete capture. We may explore whether to revise flare requirements in the future, if we conclude that new requirements are warranted and would be applicable to subject source categories.

In the meantime, we note that none of the EPA's MACT standards currently require the use of flare gas recovery systems, and the use of flare gas recovery systems, while prevalent in the petroleum refining source category, has not yet been demonstrated as being applicable to these or other chemical manufacturing source categories, primarily due to the variety of chemical compounds being sent to the flare (e.g., streams from multiple chemical manufacturing process units are often sent to the same flare header system). This issue would particularly need further analysis in order to consider the commenter's suggestion, and we are not at this point prepared to resolve it. The commenter provided no data regarding this issue that would have enabled us to promulgate its suggested revision. Nor

did the commenter provide data to support the assertion that flaring from these source categories "can create new toxic air emissions." Therefore, the EPA is not presently able to agree with the commenter's claim that the benefits of the use of flares, especially as a backup control device to reduce HAP emissions, are outweighed by secondary HAP emissions that may be caused by flaring, such that prohibiting flaring entirely is warranted at this point in the EPA's continuing analysis.

VII. Impacts of the Final Rules

A. What are the air impacts?

We are finalizing new emission standards for equipment leaks and PCCT in the PET continuous TPA high viscosity multiple end finisher subcategory regulated by the P&R IV MACT standards at the MACT floor emissions levels currently achieved by the one facility in this subcategory. As a result, no additional emission reductions from equipment leaks and PCCT in this subcategory will be realized, although increases in emissions in the future will be prevented. For the final revisions to the PAI, PEPO and P&R IV MACT standards regarding SSM and PRDs, these changes will result in fewer emissions during SSM periods and PRD releases or less frequent SSM periods or PRD releases. However, the emission reductions, while tangible, are difficult to quantify and are not included in our assessment of air quality impacts. Therefore, no quantifiable air quality impacts are expected to result from the final amendments to these three MACT standards. While we are unable to quantify these emission reductions, we expect that emissions will decrease as a result of this rulemaking.

B. What are the cost impacts?

Under the final amendments, facilities in the PAI, PEPO and P&R IV source categories are expected to incur initial capital and annual recordkeeping and reporting costs associated with the PRD monitoring requirements and other recordkeeping and reporting requirements. The capital costs for each facility were estimated based on available information on the subject source categories and data collected for other EPA projects. The total annual costs for the PAI source category are estimated to be \$222,000. The total annual costs for the PEPO source category are estimated to be \$242,000. For the P&R IV source categories, the total annual costs are estimated to be \$566,000. The memorandum titled, *Revised Cost Impacts Associated with*

¹⁴ See "Supplemental Technology Review for Equipment Leaks in Group IV Polymers and Resins, Pesticide Active Ingredient Production, and Polyether Polyols Production Source Categories." Memorandum from EC/R Incorporated to Nick Parsons, U.S. Environmental Protection Agency, January 31, 2014. (Docket ID No. EPA-HQ-OAR-2011-0435.)

¹⁵ See footnote 14.

¹⁶ See footnote 14.

the Final Pressure Relief Device Monitoring Requirements for the Pesticide Active Ingredient Production, Polyether Polyols Production, and Group IV Polymers and Resins Source Categories, includes a complete description of the cost estimate methods used for this analysis and is available in the docket for this action (EPA-HQ-OAR-2011-0435).

Though the cost savings cannot be monetized, consistent with Executive Order 13563, "Improving Regulation and Regulatory Review," issued on January 18, 2011, the electronic reporting requirements being finalized in this action for performance test reports are expected to reduce the burden for the PAI, PEPO and P&R IV facilities in the future by cutting back on the recordkeeping costs and the costs that would be associated with fewer or less-substantial data collection requests (due to performance test information being readily available on the EPA's WebFIRE database). Although the use of electric reporting may reduce the recordkeeping and reporting burden for facilities in the future, facilities will still incur annualized costs, on net, due to these final amendments.

C. What are the economic impacts?

We estimate that there will be no more than a 0.01-percent price change and a similar reduction in output associated with this action. This is based on the costs of the rule and the responsiveness of producers and consumers to supply and demand elasticities for the industries affected by this action. The impacts to affected firms will be low because the annual compliance costs are small when compared to the annual revenues for the affected parent firms (much less than 1 percent for each). The impacts to affected consumers should also be small. Thus, there will not be any significant economic impacts on affected firms and their consumers as a result of this final action.

D. What are the benefits?

As explained in the air quality impacts section, we are finalizing new emission standards for equipment leaks and PCCT in the PET continuous TPA high viscosity multiple end finisher subcategory regulated by the P&R IV MACT standards at the MACT floor emissions levels currently achieved by the one facility in this subcategory. As a result, no additional emission reductions from equipment leaks and PCCT in this subcategory will be realized, although increases in emissions in the future will be prevented. For the final revisions to the

PAI, PEPO and P&R IV MACT standards regarding SSM and PRDs, these changes will result in fewer emissions during SSM periods and PRD releases or less frequent SSM periods or PRD releases. However, the emission reductions, while tangible, are difficult to quantify and are not included in our assessment of health benefits. As a result, there are no quantifiable emission reductions associated with the final amendments for these three MACT standards and, therefore, there are no quantifiable health benefits to associate with reduced emissions. While we are unable to quantify these emission reductions, as a result of this rulemaking we expect reductions in the actual and potential cancer risks and non-cancer health effects due to emissions of HAP from these source categories.

VIII. 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" under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act

The information collection requirements in the final rule have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* The information collection requirements are not enforceable until OMB approves them. The information requirements in this rulemaking are based on the 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 CAA section 114 (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 OMB previously approved the information collection requirements contained in the existing regulations being amended with this final rule (i.e., 40 CFR part 63, subparts JJJ, MMM and PPP) under the provisions of the Paperwork Reduction Act, 44 U.S.C.

3501, *et seq.* The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9. Burden is defined at 5 CFR 1320.3(b).

For these final rules, the EPA is adding affirmative defense to the estimates of burden in the ICR for these rules. To provide the public with an estimate of the relative magnitude of the burden associated with an assertion of the affirmative defense position adopted by a source, the EPA has provided administrative adjustments to this ICR to show what the notification, recordkeeping and reporting requirements associated with the assertion of the affirmative defense might entail. The EPA's estimate for the required notification, reports and records for any individual incident, including the root cause analysis, totals \$1,584 annually per MACT standard, and is based on the time and effort required of a source to review relevant data, interview plant employees and document the events surrounding a malfunction that has caused an exceedance of an emission limit. The estimate also includes time to produce and retain the record and reports for submission to the EPA. The EPA provides this illustrative estimate of this burden because these costs are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense.

Given the variety of circumstances under which malfunctions could occur, as well as differences among sources' operation and maintenance practices, we cannot reliably predict the severity and frequency of malfunction-related excess emissions events for a particular source. It is important to note that the EPA has no basis currently for estimating the number of malfunctions that would qualify for an affirmative defense. Current historical records would be an inappropriate basis for this estimate, as source owners or operators previously operated their facilities in recognition that they were exempt from the requirement to comply with emission standards during malfunctions. Even if the historical records were an appropriate basis for this estimate, they would still lead us to believe that the number of instances in which source operators might avail themselves of the affirmative defense will be extremely small. The records indicate that only a small number of excess emissions events reported by source operators would be expected to result from a malfunction (based on the definition above), and that only a subset of excess emissions events caused by malfunctions would result in the source choosing to assert the affirmative

defense, resulting in no more than an estimated 1 or 2 such occurrences for all sources subject to subparts JJJ, MMM and PPP over the 3-year period covered by this ICR. We expect to gather information on such events in the future and will revise this estimate as better information becomes available.

1. Group IV Polymers and Resins MACT Standards

For the Group IV Polymers and Resins MACT standards, an ICR document prepared by the EPA for the amendments to the standards has been assigned EPA ICR number 2457.02. Burden changes associated with these amendments result from new recordkeeping and reporting requirements associated with the cooling towers and equipment leak provisions for one facility, and PRD monitoring systems and affirmative defense provisions for all facilities subject to the MACT standards.

We estimate 31 regulated facilities are currently subject to 40 CFR part 63, subpart JJJ. The annual monitoring, reporting and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the standards) for these amendments to subpart JJJ is estimated to be 459 labor hours at a cost of \$26,000 per year. The initial capital costs per facility (based on PRD monitoring system costs) range from \$13,000 to \$112,000. The annualized capital costs per facility range between \$1,800 to \$16,000 based on a 10-year equipment lifespan. There is no estimated change in annual burden to the federal government for these amendments.

2. Pesticide Active Ingredient Production MACT Standards

For the Pesticide Active Ingredient Production MACT standards, an ICR document prepared by the EPA for the amendments to the standards has been assigned EPA ICR number 1807.07. Burden changes associated with these amendments result from new recordkeeping and reporting requirements associated with PRD monitoring systems and affirmative defense provisions for all facilities subject to the MACT standards.

We estimate 18 regulated facilities are currently subject to 40 CFR part 63, subpart MMM. The annual monitoring, reporting and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the standards) for these amendments to subpart MMM is estimated to be 229 labor hours at a cost of \$20,000 per year. The initial capital costs per facility (based on PRD monitoring system costs)

range from \$12,700 to \$82,000. The annualized capital costs per facility range from \$1,800 to \$11,700 based on a 10-year equipment lifespan. There is no estimated change in annual burden to the federal government for these amendments.

3. Polyether Polyols Production MACT Standards

For the Polyether Polyols Production MACT standards, an ICR document prepared by the EPA for the amendments to the standards has been assigned EPA ICR number 1811.09. Burden changes associated with these amendments result from new recordkeeping and reporting requirements associated with PRD monitoring systems and affirmative defense provisions for all facilities subject to the MACT standards.

We estimate 23 regulated facilities are currently subject to 40 CFR part 63, subpart PPP. The annual monitoring, reporting and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the standards) for these amendments to subpart PPP is estimated to be 292 labor hours at a cost of \$18,000 per year. The initial capital costs per facility (based on PRD monitoring system costs) range from \$29,000 to \$69,000. The annualized capital costs per facility range from \$4,100 to \$9,800 based on a 10-year equipment lifespan. There is no estimated change in annual burden to the federal government for these amendments.

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 these ICR are approved by OMB, the agency will publish a technical amendment to 40 CFR part 9 in the *Federal Register* to display the OMB control numbers for the approved information collection requirements contained in this final rule.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of this final rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field. According to the SBA small business standards definitions, for the Group IV Polymers and Resins source categories, which have the NAICS code of 325211 (i.e., Plastics Material and Resin Manufacturing), the SBA small business size standard is 750 employees. For the PEPO source category, which has the NAICS code of 325199 (i.e., All Other Basic Organic Chemical Manufacturing), the SBA small business size standard is 1,000 employees. For the PAI source category, which has the NAICS codes of 325199 (i.e., All Other Basic Organic Chemical Manufacturing) and 325320 (i.e., Pesticide and Other Agricultural Chemical Manufacturing), the SBA small business size standards are 1,000 employees and 500 employees, respectively.

After considering the economic impacts of this final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. There are no affected small businesses in any source category affected by the final rule. Virtually all of the companies affected by this rule are large integrated corporations that are not considered to be small entities per the definitions provided in this section.

Although this final rule will not have a significant economic impact on a substantial number of small entities, the EPA nonetheless has tried to reduce the impact of this rule on small entities that could potentially be impacted by this rule in the future. The final requirements for PRD monitoring have been revised to provide facilities with greater flexibility based on their current equipment and operations. In addition, the final malfunction recordkeeping requirement was designed to provide all affected facilities, including small entities, with a means of supporting an affirmative defense in the event of a violation occurring during a malfunction.

D. Unfunded Mandates Reform Act

This rule does not contain a federal mandate that may result in expenditures of \$100 million or more for state, local

or tribal governments, in the aggregate, or the private sector in any one year. Thus, this rule is not subject to the requirements of sections 202 or 205 of the UMRA.

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments nor does it impose obligations upon them.

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, as specified in Executive Order 13132. None of the affected facilities are owned or operated by state governments, and the requirements discussed in today's notice will not supersede state regulations that are more stringent. The burden to the respondents and the states is approximately \$977,000 for the three MACT standards addressed in this final rule. Thus, Executive Order 13132 does not apply to this action.

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effect 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. Although Executive Order 13175 does not apply to this action, the EPA solicited comments on this action from tribal officials, but received none.

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

This action is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) 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. This action will not relax the control measures on existing regulated

sources, and EPA's risk assessments (included in the docket for this action) demonstrate that the existing regulations are health protective.

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

This action is not subject to Executive Order 13211, (66 FR 28355, May 22, 2001), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113 (15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures and business practices) that are developed or adopted by VCS bodies. NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This action involves technical standards. The EPA has elected to use ASTM D2908-74 or 91 and ASTM D3370-76 or 95a for the PCCT at the one Group IV Polymers and Resins facility in the PET continuous TPA high viscosity multiple end finisher subcategory. No applicable VCS were identified for these methods.

Under section 63.7(f) and section 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.

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) establishes federal executive policy on environmental justice. Its main provision 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 and low-income populations in the United States.

The EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it 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 or low-income population. To examine the potential for any environmental justice issues that might be associated with the level of the standards for each source category, we performed a comparative analysis of the demographics of the population within the vicinity of the facilities in these source categories (i.e., within a 3-mile radius) and the national average demographic distributions. Our analysis shows that most demographic categories are within 2 percentage points of national averages, except for the African American population, which exceeds the national average by 6 percentage points (18 percent versus 12 percent). The EPA has determined that the current health risks posed by emissions from these source categories are acceptable and provide an ample margin of safety to protect public health and prevent adverse environmental effects.

K. Congressional Review Act

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 final rule and other required information to the United States Senate, the United States House of Representatives and the Comptroller General of the United States prior to publication of the final 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). The final rules will be effective on March 27, 2014.

List of Subjects for 40 CFR Part 63

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

Dated: January 31, 2014.

Gina McCarthy,
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency (EPA) is amending Title 40, chapter I, of the Code of Federal Regulations (CFR) as follows:

PART 63—[AMENDED]

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

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

Subpart A—[Amended]

- 2. Section 63.14 is amended by:
- a. Removing paragraphs (g)(28) and (29);
 - b. Redesignating paragraphs (g)(30) through (84) as (g)(40) to (94); and
 - c. Adding new paragraphs (g)(28) through (39).

The additions read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(g) * * *

(28) ASTM D2908–74, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved June 27, 1974, IBR approved for § 63.1329(c).

(29) ASTM D2908–91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 15, 1991, IBR approved for § 63.1329(c).

(30) ASTM D2908–91(Reapproved 2001), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 15, 1991, IBR approved for § 63.1329(c).

(31) ASTM D2908–91(Reapproved 2005), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 1, 2005, IBR approved for § 63.1329(c).

(32) ASTM D2908–91(Reapproved 2011), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved May 1, 2011, IBR approved for § 63.1329(c).

(33) ASTM D3173–03 (Reapproved 2008), Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, (Approved February 1, 2008), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(34) ASTM D3257–93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).

(35) ASTM D3370–76, Standard Practices for Sampling Water, Approved

August 27, 1976, IBR approved for § 63.1329(c).

(36) ASTM D3370–95a, Standard Practices for Sampling Water from Closed Conduits, Approved September 10, 1995, IBR approved for § 63.1329(c).

(37) ASTM D3370–07, Standard Practices for Sampling Water from Closed Conduits, Approved December 1, 2007, IBR approved for § 63.1329(c).

(38) ASTM D3370–08, Standard Practices for Sampling Water from Closed Conduits, Approved October 1, 2008, IBR approved for § 63.1329(c).

(39) ASTM D3370–10, Standard Practices for Sampling Water from Closed Conduits, Approved December 1, 2010, IBR approved for § 63.1329(c).

* * * * *

Subpart JJJ—[Amended]

- 3. Section 63.1310 is amended by:

- a. Revising paragraphs (a)(4) introductory text, (a)(4)(iv), and (a)(4)(vi);
- b. Revising paragraph (c)(1);
- c. Revising paragraph (d) introductory text;
- d. Revising paragraph (j); and
- e. Adding paragraph (k).

The revisions and additions read as follows:

§ 63.1310 Applicability and designation of affected sources.

(a) * * *

(4) *Emission points and equipment.* The affected source also includes the emission points and components specified in paragraphs (a)(4)(i) through (vi) of this section that are associated with each applicable group of one or more TPPU constituting an affected source.

* * * * *

(iv) Each process contact cooling tower used in the manufacture of poly (ethylene terephthalate) resin (PET) that is associated with a new affected source.

* * * * *

(vi) Components required by, or utilized as a method of compliance with, this subpart, which may include control devices and recovery devices.

* * * * *

(c) * * *

(1) Components and equipment that do not contain organic HAP and are located within a TPPU that is part of an affected source;

* * * * *

(d) *Processes excluded from the affected source.* The processes specified in paragraphs (d)(1) through (5) of this section are not part of the affected source and are not subject to the

requirements of both this subpart and subpart A of this part:

* * * * *

(j) *Applicability of this subpart.* (1) The emission limitations set forth in this subpart and the emission limitations referred to in this subpart shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies.

(2) The emission limitations set forth in subpart H of this part, as referred to in § 63.1331, shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) in which the lines are drained and depressurized, resulting in cessation of the emissions to which § 63.1331 applies.

(3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with this subpart during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment, if the shutdown would contravene requirements of this subpart applicable to such items of equipment.

(4) *General duty.* At all times, the owner or operator 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 the owner or operator 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.

(k) *Affirmative defense for violation of emission standards during malfunction.* In response to an action to enforce the standards set forth in this subpart, the owner or operator may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 63.2. Appropriate penalties may be assessed if the owner or operator fails to meet their burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) Assertion of affirmative defense.

To establish the affirmative defense in any action to enforce such a standard, the owner or operator must timely meet the reporting requirements in paragraph (k)(2) of this section, and must prove by a preponderance of evidence that:

(i) The violation:

(A) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when a violation occurred; and

(iii) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(iv) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(2) Report. The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator, with all necessary supporting documentation, that explains how it has met the

requirements set forth in paragraph (k)(1) of this section. This affirmative defense report shall be included in the first periodic compliance report, deviation report, or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance report, deviation report, or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance report, deviation report, or excess emission report due after the initial occurrence of the violation of the relevant standard.

■ 4. Section 63.1311 is amended by:

■ a. Revising paragraphs (b) and (c);

■ b. Revising paragraphs (d) introductory text and (d)(6); and

■ c. Adding paragraph (d)(7).

The revisions and additions read as follows:

§ 63.1311 Compliance dates and relationship of this subpart to existing applicable rules.

(b) New affected sources that commence construction or reconstruction after March 29, 1995 shall be in compliance with this subpart (except § 63.1331(a)(9)(iii)) upon initial start-up or by June 19, 2000, whichever is later, except that new affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET shall be in compliance with § 63.1331 (except § 63.1331(a)(9)(iii)) upon initial start-up or August 6, 2002, whichever is later. New affected sources that commenced construction or reconstruction after March 25, 1995, but on or before January 9, 2012, shall be in compliance with the pressure relief device monitoring requirements of § 63.1331(a)(9)(iii) no later than March 27, 2017. New affected sources that commenced construction or reconstruction after January 9, 2012, shall be in compliance with the pressure relief device monitoring requirements of § 63.1331(a)(9)(iii) upon initial startup or by March 27, 2014, whichever is later.

(c) Existing affected sources shall be in compliance with this subpart (except for § 63.1331 for which compliance is covered by paragraph (d) of this section) no later than June 19, 2001, as provided in § 63.6(c), unless an extension has been granted as specified in paragraph (e) of this section, except that the compliance date for the provisions contained in § 63.1329 is extended to

March 27, 2014, for existing affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET using a continuous terephthalic acid high viscosity multiple end finisher process.

(d) Except as provided for in paragraphs (d)(1) through (7) of this section, existing affected sources shall be in compliance with § 63.1331 no later than June 19, 2001, unless an extension has been granted pursuant to paragraph (e) of this section.

* * * * *

(6) Notwithstanding paragraphs (d)(1) through (5) of this section, existing affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET shall be in compliance with § 63.1331 (except § 63.1331(a)(9)(iii)) no later than August 6, 2002.

(7) Compliance with the pressure relief device monitoring provisions of § 63.1331(a)(9)(iii) shall occur no later than March 27, 2017.

* * * * *

■ 5. Section 63.1312 is amended by:

■ a. Adding, alphabetically, the term "Pressure relief device or valve (§ 63.161)" and removing the term "Start-up, shutdown, and malfunction plan (§ 63.101)" in paragraph (a); and

■ b. Adding the definition for "Affirmative defense" in alphabetical order in paragraph (b).

The revisions and additions read as follows:

§ 63.1312 Definitions.

* * * * *

(b) * * *

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

* * * * *

■ 6. Section 63.1315 is amended by:

■ a. Revising paragraph (a) introductory text;

■ b. Adding paragraph (a)(19); and

■ c. Revising paragraph (b)(2).

The revisions and additions read as follows:

§ 63.1315 Continuous process vents provisions.

(a) For each continuous process vent located at an affected source, the owner or operator shall comply with the requirements of §§ 63.113 through 63.118, with the differences noted in paragraphs (a)(1) through (19) of this section for the purposes of this subpart,

except as provided in paragraphs (b) through (e) of this section.

* * * * *

(19) During periods of startup or shutdown, as an alternative to using the procedures specified in § 63.116, an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraph (a)(19)(i), (ii), or (iii) of this section.

(i) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(ii) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1318(b)(1). Keep records of this calculation.

(iii) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in § 63.113(a)(1) or (2) were maintained at the level established to meet the emission limit at maximum representative operating conditions.

(b) * * *

(2) Not allow organic HAP emissions from the collection of continuous process vents at the affected source to be greater than 0.000590 kg organic HAP/Mg of product. Compliance with this paragraph (b)(2) shall be determined using the procedures specified in § 63.1333(b). During periods of startup or shutdown, as an alternative to using the procedures specified in § 63.1333(b), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraph (b)(2)(i), (ii), or (iii) of this section.

(i) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(ii) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1333(b). Keep records of this calculation.

(iii) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(2) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

* * * * *

■ 7. Section 63.1316 is amended by revising paragraphs (b)(1)(i)(A),

(b)(1)(ii)(A), (b)(2)(i)(A), (b)(2)(ii)(A), and (c)(1)(i) to read as follows:

§ 63.1316 PET and polystyrene affected sources—emissions control provisions.

* * * * *

(b) * * *

(1) * * *

(i) * * *

(A) Organic HAP emissions from all continuous process vents in each individual material recovery section shall, as a whole, be no greater than 0.018 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of material recovery sections within the affected source shall, as a whole, be no greater than 0.018 kg organic HAP per Mg product from all associated TPPU. During periods of startup or shutdown, as an alternative to using the procedures specified in § 63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(1)(i)(A)(1), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(1)(i)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

* * * * *

(ii) * * *

(A) Organic HAP emissions from all continuous process vents in each individual polymerization reaction section (including emissions from any equipment used to further recover ethylene glycol, but excluding emissions from process contact cooling towers) shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of polymerization reaction sections within the affected source shall, as a whole, be no greater than 0.02 kg organic HAP per Mg product from all associated TPPU(s). During periods of startup or shutdown, as an alternative to

using the procedures specified in § 63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(1)(ii)(A)(1), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(1)(ii)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

* * * * *

(2) * * *

(i) * * *

(A) Organic HAP emissions from all continuous process vents associated with the esterification vessels in each individual raw materials preparation section shall, as a whole, be no greater than 0.04 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents associated with the esterification vessels in the collection of raw material preparation sections within the affected source shall, as a whole, be no greater than 0.04 kg organic HAP per Mg of product from all associated TPPU(s). Other continuous process vents (i.e., those not associated with the esterification vessels) in the collection of raw materials preparation sections within the affected source shall comply with § 63.1315. During periods of startup or shutdown, as an alternative to using the procedures specified in § 63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(2)(i)(A)(1), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(2)(i)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

* * * * *

(ii) * * *

(A) Organic HAP emissions from all continuous process vents in each individual polymerization reaction section (including emissions from any equipment used to further recover ethylene glycol, but excluding emissions from process contact cooling towers) shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of polymerization reaction sections within the affected source shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from all associated TPPU(s). During periods of startup or shutdown, as an alternative to using the procedures specified in § 63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(2)(ii)(A)(1), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(2)(ii)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

* * * * *

(c) * * *

(1) * * *

(i) Organic HAP emissions from all continuous process vents in each individual material recovery section shall, as a whole, be no greater than 0.0036 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of material recovery sections within the affected source shall, as a whole, be no greater than 0.0036 kg

organic HAP per Mg of product from all associated TPPU(s). During periods of startup or shutdown, as an alternative to using the procedures specified in § 63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (c)(1)(i)(A), (B), or (C) of this section.

(A) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(B) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to § 63.1318(b)(1). Keep records of this calculation.

(C) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (c)(1)(i) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

* * * * *

■ 8. Section 63.1318 is amended by:

■ a. Adding a sentence after the first sentence of paragraph (b)(1) introductory text and before Equation 1; and

■ b. Adding a sentence to the end of paragraph (c).

The additions read as follows:

§ 63.1318 PET and polystyrene affected sources—testing and compliance demonstration provisions.

* * * * *

(b) * * *

(1) * * * During periods of startup or shutdown, as an alternative to using Equation 1 of this subpart, the owner or operator may divide the emission rate of total organic HAP or TOC during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero to determine compliance with the emission limit. * * *

* * * * *

(c) *Compliance with mass emissions per mass product standards.* * * *

During periods of startup or shutdown, as an alternative to using the procedures specified in paragraph (b)(1) of this section, the owner or operator may divide the emission rate of total organic HAP or TOC during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a

production rate greater than zero to comply with the emission limit.

* * * * *

■ 9. Section 63.1319 is amended by revising the heading of paragraph (c) to read as follows:

§ 63.1319 PET and polystyrene affected sources—recordkeeping provisions.

* * * * *

(c) *Records demonstrating compliance with temperature limits for final condensers.* * * *

■ 10. Section 63.1324 is amended by revising the second sentence of paragraph (c)(4)(ii)(C) to read as follows:

§ 63.1324 Batch process vents—monitoring equipment.

* * * * *

(c) * * *

(4) * * *

(ii) * * *

(C) * * * The plan shall require determination of gas stream flow by a method which will at least provide a value for either a representative or the highest gas stream flow anticipated in the scrubber during representative operating conditions other than malfunctions. * * *

■ 11. Section 63.1329 is amended by revising the first sentence of paragraph (c) introductory text; and adding paragraphs (c)(2)(i) and (ii).

The revisions and additions read as follows:

§ 63.1329 Process contact cooling towers provisions.

* * * * *

(c) *Existing affected source requirements.* The owner or operator of an existing affected source subject to this section who manufactures PET using a continuous terephthalic acid high viscosity multiple end finisher process and who is subject or becomes subject to 40 CFR part 60, subpart DDD, shall maintain an ethylene glycol concentration in the process contact cooling tower at or below 6.0 percent by weight averaged on a daily basis over a rolling 14-day period of operating days. * * *

(2) * * *

(i) Where 40 CFR 60.564(j)(1) requires the use of ASTM D2908–74 or 91, “Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography,” ASTM D2908–91 (2011), D2908–91 (2005), D2908–91 (2001), D2908–91, or D2908–74 (all standards incorporated by reference, see § 63.14) may be used.

(ii) Where 40 CFR 60.564(j)(1)(i) requires the use of ASTM D3370–76 or 95a, “Standard Practices for Sampling

Water from Closed Conduits," ASTM D3370-10, D3370-08, D3370-07, D3370-95a, or D3370-76 (all standards incorporated by reference, see § 63.14) may be used.

* * * * *

- 12. Section 63.1331 is amended by:
- a. Revising paragraph (a) introductory text;
- b. Adding paragraph (a)(9); and
- c. Revising paragraph (c).

The revisions and additions read as follows:

§ 63.1331 Equipment leak provisions.

(a) Except § 63.165 and as provided for in paragraphs (b) and (c) of this section, the owner or operator of each affected source shall comply with the requirements of subpart H of this part, with the differences noted in paragraphs (a)(1) through (13) of this section.

* * * * *

(9) *Requirements for pressure relief devices.* Except as specified in paragraph (a)(9)(iv) of this section, the owner or operator must comply with the operating and pressure release requirements specified in paragraphs (a)(9)(i) and (ii) of this section for pressure relief devices in organic HAP gas or vapor service. Except as specified in paragraph (a)(9)(iv) of this section, the owner or operator must also comply with the pressure release management requirements specified in paragraph (a)(9)(iii) of this section for all pressure relief devices in organic HAP service.

(i) *Operating requirements.* Except during a pressure release event, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as detected by Method 21 of 40 CFR part 60, appendix A.

(ii) *Pressure release requirements.* For pressure relief devices in organic HAP gas or vapor service, comply with paragraph (a)(9)(ii)(A) or (B) of this section, as applicable.

(A) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as detected by Method 21 of 40 CFR part 60, appendix A, no later than 5 calendar days after the pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm above background, except as provided in § 63.171.

(B) If the pressure relief device consists of or includes a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release, except as provided in § 63.171.

(iii) *Pressure release management.*

Except as specified in paragraph (a)(9)(iv) of this section, pressure releases to the atmosphere from pressure relief devices in organic HAP service are prohibited, and the owner or operator must comply with the requirements specified in paragraphs (a)(9)(iii)(A) and (B) of this section for all pressure relief devices in organic HAP service.

(A) For each pressure relief device in organic HAP service, the owner or operator must equip each pressure relief device with a device(s) or use a monitoring system that is capable of:

- (1) Identifying the pressure release;
- (2) Recording the time and duration of each pressure release; and

(3) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.

(B) If any pressure relief device in organic HAP service releases to atmosphere as a result of a pressure release event, the owner or operator must calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in § 63.1335(a)(6)(xiii). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

(iv) *Pressure relief devices routed to a control device, process, or drain system.* If a pressure relief device in organic HAP service is designed and operated to route all pressure releases through a closed vent system to a control device, process, or drain system, the owner or operator is not required to comply with paragraphs (a)(9)(i), (ii), or (iii) (if applicable) of this section. Both the closed vent system and control device (if applicable) must meet the requirements of § 63.172. The drain system (if applicable) must meet the requirements of § 63.136.

* * * * *

(c)(1) Each affected source producing PET using a continuous TPA high viscosity multiple end finisher process shall monitor for leaks upon startup following an outage where changes have been made to equipment in gas/vapor or light liquid service. This leak check

shall consist of the introduction of hot ethylene glycol vapors into the system for a period of no less than 2 hours during which time sensory monitoring of the equipment shall be conducted.

(2) A leak is determined to be detected if there is evidence of a potential leak found by visual, audible, or olfactory means.

(3) When a leak is detected, it shall be repaired as soon as practical, but not later than 15 days after it is detected, except as provided in § 63.171.

(i) The first attempt at repair shall be made no later than 5 days after each leak is detected.

(ii) Repaired shall mean that the visual, audible, olfactory or other indications of a leak have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

(4) When a leak is detected, the following information shall be recorded and kept for 2 years and reported in the next periodic report:

(i) The instrument and the equipment identification number and the operator name, initials or identification number.

(ii) The date the leak was detected and the date of first attempt to repair the leak.

(iii) The date of successful repair of the leak.

■ 13. Section 63.1332 is amended by revising paragraph (f) to read as follows:

§ 63.1332 Emissions averaging provisions.

* * * * *

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions during periods of monitoring excursions, as defined in § 63.1334(f). For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(1) through (3) of this section.

(1) No credits would be assigned to the credit-generating emission point.

(2) Maximum debits would be assigned to the debit-generating emission point.

(3) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in paragraph (l) of this section.

* * * * *

■ 14. Section 63.1333 is amended by:

- a. Revising paragraphs (a) introductory text and (a)(1) introductory text; and

- b. Adding a sentence after the third sentence of paragraph (b) introductory text and before Equation 49.

The revisions and additions read as follows:

§ 63.1333 Additional requirements for performance testing.

(a) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested and in accordance with § 63.7(a)(1), (a)(3), (d), (e)(2), (e)(4), (g), and (h), with the exceptions specified in paragraphs (a)(1) through (5) of this section and the additions specified in paragraphs (b) through (d) of this section. Representative conditions exclude periods of startup and shutdown unless specified by the Administrator or an applicable subpart. The owner or operator may not conduct performance tests during periods of malfunction. The owner or operator 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. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests. Sections 63.1314 through 63.1330 also contain specific testing requirements.

(1) Performance tests shall be conducted according to the provisions of § 63.7(e)(2), except that performance tests shall be conducted at maximum representative operating conditions achievable during one of the time periods described in paragraph (a)(1)(i) of this section, without causing any of the situations described in paragraph (a)(1)(ii) of this section to occur.

(b) * * * During periods of startup or shutdown, as an alternative to using Equation 49 of this subpart, the owner or operator may divide the emission rate of total organic HAP or TOC during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero to comply with the emission limit. * * *

■ 15. Section 63.1334 is amended by:

- a. Revising the last sentence of paragraph (f)(1) introductory text and paragraph (f)(1)(v);
- b. Revising the last sentence of paragraph (f)(2) introductory text and paragraph (f)(2)(ii)(B);
- c. Revising the last sentence of paragraph (f)(3) introductory text and the last sentence of paragraph (f)(3)(i) introductory text;

- d. Revising the last sentence of paragraph (f)(4);
- e. Revising paragraphs (f)(5) and (f)(6);
- f. Revising the last sentence of paragraph (f)(7); and
- g. Removing paragraph (g).

The revisions read as follows:

§ 63.1334 Parameter monitoring levels and excursions.

* * * * *

(f) * * *

(1) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

* * * * *

(v) The periods listed in paragraphs (f)(1)(v)(A) and (B) of this section are not considered to be part of the period of control or recovery device operation, for the purposes of paragraphs (f)(1)(ii) and (iii) of this section.

(A) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; or

(B) Periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

(2) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

* * * * *

(ii) * * *

(B) Subtract the time during the periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments from the total amount of time determined in paragraph (f)(2)(ii)(A) of this section, to obtain the operating time used to determine if monitoring data are insufficient.

* * * * *

(3) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

(i) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

* * * * *

(4) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

(5) With respect to continuous process vents complying with the temperature limits for final condensers specified in § 63.1316(b)(1)(i)(B) or (c)(1)(ii), an excursion has occurred when the daily average exit temperature exceeds the appropriate condenser temperature limit. For each excursion, the owner or

operator shall be deemed out of compliance with the provisions of this subpart. The periods listed in paragraphs (f)(5)(i) and (ii) of this section are not considered to be part of the period of operation for the condenser for purposes of determining the daily average exit temperature.

(i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; or

(ii) Periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

(6) With respect to new affected sources producing SAN using a batch process, an excursion has occurred when the percent reduction calculated using the procedures specified in § 63.1333(c) is less than 84 percent. For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart. The periods listed in paragraphs (f)(6)(i) and (ii) of this section are not considered to be part of the period of control or recovery device operation for purposes of determining the percent reduction.

(i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; or

(ii) Periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

(7) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

■ 16. Section 63.1335 is amended by:

- a. Revising paragraph (b)(1);
- b. Revising the first two sentences of paragraph (d) introductory text;
- c. Revising the paragraph (d)(7);
- d. Adding paragraph (d)(10);
- e. Revising the first sentence of paragraph (e) introductory text;
- f. Revising the first sentence of paragraph (e)(3) introductory text;
- g. Adding a sentence to the end of paragraph (e)(3)(i);
- h. Revising paragraph (e)(3)(v);
- i. Removing and reserving paragraph (e)(3)(viii);
- j. Revising paragraph (e)(3)(ix)(B);
- k. Adding a sentence to the end of paragraph (e)(5) introductory text;
- l. Adding paragraph (e)(5)(xii);
- m. Revising the first two sentences of paragraph (e)(6) introductory text;
- n. Revising the first sentence of paragraph (e)(6)(iii)(B);
- o. Revising paragraphs (e)(6)(iii)(E), (e)(6)(xi)(A)(1), and (e)(6)(xii)(D);
- p. Adding paragraphs (e)(6)(xiii) and (e)(9);

- q. Revising the first sentence of paragraph (h)(1)(i);
- r. Revising paragraph (h)(1)(ii);
- s. Revising the first sentence of paragraph (h)(1)(iii); and
- t. Revising paragraphs (h)(2)(iii) and (iv).

The revisions and additions read as follows:

§ 63.1335 General recordkeeping and reporting provisions.

* * *

(b) * * *

(1) *Malfunction recordkeeping and reporting.* (i) Records of malfunctions. The owner or operator shall keep the records specified in paragraphs (b)(1)(i)(A) through (C) of this section.

(A) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time, and duration of each failure.

(B) For each failure to meet an applicable standard, 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.

(C) Record actions taken to minimize emissions in accordance with § 63.1310(j)(4), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(ii) *Reports of malfunctions.* If a source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to meet an applicable standard. For each instance, report the date, time, 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.

* * *

(d) *Recordkeeping and documentation.* Owners or operators required to keep continuous records shall keep records as specified in paragraphs (d)(1) through (10) of this section, unless an alternative recordkeeping system has been requested and approved as specified in paragraph (g) of this section, and except as provided in paragraph (h) of this section. If a monitoring plan for storage vessels pursuant to § 63.1314(a)(9) requires continuous records, the monitoring plan shall specify which provisions, if any, of paragraphs (d)(1) through (10) of this section apply. * * *

(7) Monitoring data recorded during periods identified in paragraphs (d)(7)(i)

and (ii) of this section shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device or recovery device operation when monitors are not operating.

(i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; or

(ii) Periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

* * *

(10) For pressure relief devices in organic HAP service, keep records of the information specified in paragraphs (d)(10)(i) through (v) of this section, as applicable.

(i) A list of identification numbers for pressure relief devices that the owner or operator elects to equip with a closed-vent system and control device, subject to the provisions in § 63.1331(a)(9)(iv).

(ii) A list of identification numbers for pressure relief devices subject to the provisions in § 63.1331(a)(9)(i).

(iii) A list of identification numbers for pressure relief devices equipped with rupture disks, subject to the provisions in § 63.1331(a)(9)(ii)(B).

(iv) The dates and results of the Method 21 of 40 CFR part 60, appendix A, monitoring following a pressure release for each pressure relief device subject to the provisions in § 63.1331(a)(9)(i) and (ii). The results shall include:

(A) The background level measured during each compliance test.

(B) The maximum instrument reading measured at each piece of equipment during each compliance test.

(v) For pressure relief devices in organic HAP service subject to § 63.1331(a)(9)(iii), keep records of each pressure release to the atmosphere, including the following information:

(A) The source, nature, and cause of the pressure release.

(B) The date, time, and duration of the pressure release.

(C) The quantity of total HAP emitted during the pressure release and the calculations used for determining this quantity.

(D) The actions taken to prevent this pressure release.

(E) The measures adopted to prevent future such pressure releases.

(e) *Reporting and notification.* In addition to the reports and notifications required by subpart A of this part as specified in Table 1 of this subpart, the owner or operator of an affected source

shall prepare and submit the reports listed in paragraphs (e)(3) through (9) of this section, as applicable. * * *

(3) *Precompliance Report.* Owners or operators of affected sources requesting an extension for compliance; requesting approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping or alternative controls; requesting approval to use engineering assessment to estimate emissions from a batch emissions episode, as described in § 63.1323(b)(6)(i)(C); or wishing to establish parameter monitoring levels according to the procedures contained in § 63.1334(c) or (d), shall submit a Precompliance Report according to the schedule described in paragraph (e)(3)(i) of this section. * * *

(i) *Submittal dates.* * * * To submit a Precompliance Report for the first time after the compliance date to request an extension for compliance; request approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping or alternative controls; request approval to use engineering assessment to estimate emissions from a batch emissions episode, as described in § 63.1323(b)(6)(i)(C); or to request to establish parameter monitoring levels according to the procedures contained in § 63.1334(c) or (d), the owner or operator shall notify the Administrator at least 90 days before the planned change is to be implemented; the change shall be considered approved if the Administrator either approves the change in writing, or fails to disapprove the change in writing within 45 days of receipt.

* * *

(v) The owner or operator shall report the intent to use alternative emission standards to comply with the provisions of this subpart in the Precompliance Report. The Administrator may deem alternative emission standards to be equivalent to the standard required by the subpart, under the procedures outlined in § 63.6(g).

* * *

(ix) * * *

(B) Supplements to the Precompliance Report may be submitted to request approval to use alternative monitoring parameters, as specified in paragraph (e)(3)(iii) of this section; to use alternative continuous monitoring and recordkeeping, as specified in paragraph (e)(3)(iv) of this section; to use alternative controls, as specified in paragraph (e)(3)(v) of this section; to use engineering assessment to estimate emissions from a batch emissions episode, as specified in paragraph

(e)(3)(vi) of this section; or to establish parameter monitoring levels according to the procedures contained in § 63.1334(c) or (d), as specified in paragraph (e)(3)(vii) of this section.

* * * * *

(5) *Notification of Compliance Status.* * * * For pressure relief devices subject to the requirements of § 63.1331(a)(9)(iii), the owner or operator shall submit the information listed in paragraph (e)(5)(xii) of this section in the Notification of Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring.

* * * * *

(xii) For pressure relief devices in organic HAP service, a description of the device or monitoring system to be implemented, including the pressure relief devices and process parameters to be monitored (if applicable), a description of the alarms or other methods by which operators will be notified of a pressure release, and a description of how the owner or operator will determine the information to be recorded under paragraphs (d)(10)(v)(B) and (C) of this section (i.e., the duration of the pressure release and the methodology and calculations for determining of the quantity of total HAP emitted during the pressure release).

(6) *Periodic Reports.* For existing and new affected sources, the owner or operator shall submit Periodic Reports as specified in paragraphs (e)(6)(i) through (xiii) of this section. In addition, for equipment leaks subject to § 63.1331, with the exception of § 63.1331(c), the owner or operator shall submit the information specified in § 63.182(d) under the conditions listed in § 63.182(d), and for heat exchange systems subject to § 63.1328, the owner or operator shall submit the information specified in § 63.104(f)(2) as part of the Periodic Report required by this paragraph (e)(6). * * *

(iii) * * *

(B) The daily average values or batch cycle daily average values of monitored parameters for unexcused excursions, as defined in § 63.1334(f). * * *

(E) The information in paragraph (b)(1)(ii) of this section for reports of malfunctions.

* * * * *

(xii) * * *

(A) * * *

(1) A control or recovery device for a particular emission point or process section has one or more excursions, as defined in § 63.1334(f), in two consecutive semiannual reporting periods; or

* * * * *

(D) After quarterly reports have been submitted for an emission point for 1 year without one or more excursions occurring (during that year), the owner or operator may return to semiannual reporting for the emission point or process section.

(xiii) For pressure relief devices in organic HAP service, Periodic Reports must include the information specified in paragraphs (e)(6)(xiii)(A) through (C) of this section.

(A) For pressure relief devices in organic HAP service subject to § 63.1331(a)(9), report confirmation that all monitoring to show compliance was conducted within the reporting period.

(B) For pressure relief devices in organic HAP gas or vapor service subject to § 63.1331(a)(9)(ii), report any instrument reading of 500 ppm above background or greater, more than 5 calendar days after the pressure release.

(C) For pressure relief devices in organic HAP service subject to § 63.1331(a)(9)(iii), report each pressure release to the atmosphere, including the following information:

(1) The source, nature, and cause of the pressure release.

(2) The date, time, and duration of the pressure release.

(3) The quantity of total HAP emitted during the pressure release and the method used for determining this quantity.

(4) The actions taken to prevent this pressure release.

(5) The measures adopted to prevent future such pressure releases.

* * * * *

(9) *Electronic reporting.* Within 60 days after the date of completing each performance test (as defined in § 63.2), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, required by this subpart according to the methods specified in paragraphs (e)(9)(i) or (ii) of this section.

(i) For data collected using test methods supported by the EPA-provided software, the owner or operator shall submit the results of the performance test to the EPA by direct computer-to-computer electronic transfer via EPA-provided software, unless otherwise approved by the Administrator. Owners or operators, who claim that some of the information being submitted for performance tests is confidential business information (CBI), must submit a complete file using EPA-provided software that includes information claimed to be CBI on a compact disk, flash drive, or other commonly used electronic storage media to the EPA. The electronic media

must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA by direct computer-to-computer electronic transfer via EPA-provided software.

(ii) For any performance test conducted using test methods that are not compatible with the EPA-provided software, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in § 60.4.

* * * * *

(h) * * *

(1) * * *

(i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation (e.g., a temperature reading of -200°C on a boiler), and will alert the operator by alarm or other means. * * *

(ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this running average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (h)(1)(ii)(A) and (B) of this section. All instances in an operating day constitute a single occurrence.

(A) The running average is above the maximum or below the minimum established limits; and

(B) The running average is based on at least six 1-hour average values.

(iii) The monitoring system is capable of detecting unchanging data during periods of operation, except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. * * *

(2) * * *

(iii) The owner or operator shall retain the records specified in paragraphs (h)(1)(i) through (iii) of this section, for the duration specified in this paragraph (h). For any calendar week, if compliance with paragraphs (h)(1)(i) through (iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation.

(iv) For purposes of paragraph (h) of this section, an excursion means that

the daily average (or batch cycle daily average) value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value.

■ 17. Table 1 to Subpart JJJ of Part 63 is amended by:

■ a. Removing entries § 63.1(a)(6)–(8) and § 63.1(a)(9);

■ b. Adding entries § 63.1(a)(6) and § 63.1(a)(7)–(9);

■ c. Revising entries § 63.1(c)(4), § 63.6(e), § 63.6(e)(1)(i), and § 63.6(e)(1)(ii);

■ d. Adding entry § 63.6(e)(3);

■ e. Removing entries § 63.6(e)(3)(i), § 63.6(e)(3)(i)(A), § 63.6(e)(3)(i)(B), § 63.6(e)(3)(i)(C), § 63.6(e)(3)(ii), § 63.6(e)(3)(iii), § 63.6(e)(3)(iv), § 63.6(e)(3)(v), § 63.6(e)(3)(vi), § 63.6(e)(3)(vii), § 63.6(e)(3)(vii)(A),

§ 63.6(e)(3)(vii)(B), § 63.6(e)(3)(vii)(C), § 63.6(e)(3)(viii), and § 63.6(e)(3)(ix);

■ f. Revising entries § 63.6(f)(1), § 63.7(e)(1), § 63.8(c)(1)(i), § 63.8(c)(1)(ii), and § 63.8(c)(1)(iii);

■ g. Adding entry § 63.10(d)(5);

■ h. Removing entries § 63.10(d)(5)(i) and § 63.10(d)(5)(ii); and

■ i. Removing footnote (a).

The revisions and additions read as follows:

TABLE 1 TO SUBPART JJJ OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART JJJ AFFECTED SOURCES

Reference	Applies to Subpart JJJ	Explanation
§ 63.1(a)(6)	Yes	
§ 63.1(a)(7)–(9)	No	[Reserved.]
§ 63.1(c)(4)	No	[Reserved.]
§ 63.6(e)	Yes	Except as otherwise specified for individual paragraphs.
§ 63.6(e)(1)(i)	No	See § 63.1310(j)(4) for general duty requirement.
§ 63.6(e)(1)(ii)	No	
§ 63.6(e)(3)	No	
§ 63.6(f)(1)	No	
§ 63.7(e)(1)	No	See § 63.1333(a).
§ 63.8(c)(1)(i)	No	
§ 63.8(c)(1)(ii)	No	
§ 63.8(c)(1)(iii)	No	
§ 63.10(d)(5)	No	See § 63.1335(b)(1)(ii) for malfunction reporting requirements.

Subpart MMM—[Amended]

■ 18. Section 63.1360 is amended by:

■ a. Revising paragraphs (e) heading, (e)(1) introductory text, (e)(3), and (e)(4); and

■ b. Adding paragraph (k).

The revisions and additions read as follows:

§ 63.1360 Applicability.

(e) *Applicability of this subpart.* (1) Each provision set forth in this subpart shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies.

(3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with the emissions limitations of this subpart

during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment, if the shutdown would contravene emissions limitations of this subpart applicable to such items of equipment.

(4) *General duty.* At all times, the owner or operator 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 the owner or operator 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.

(k) *Affirmative defense for violation of emission standards during malfunction.* In response to an action to enforce the standards set forth in this subpart, the owner or operator may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 63.2.

Appropriate penalties may be assessed if the owner or operator fails to meet their burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) *Assertion of affirmative defense.* To establish the affirmative defense in

any action to enforce such a standard, the owner or operator must timely meet the reporting requirements in paragraph (k)(2) of this section, and must prove by a preponderance of evidence that:

(i) The violation:

(A) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when a violation occurred; and

(iii) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(iv) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(2) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator, with all necessary supporting documentation, that explains how it has met the requirements set forth in paragraph (k)(1) of this section. This affirmative

defense report shall be included in the first periodic compliance report, deviation report, or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

■ 19. Section 63.1361 is amended by:

■ a. Adding in alphabetical order the definition for "Affirmative defense";

■ b. In the definition of "Group 1 process vent" by removing the word "hydrogen" and adding in its place the word "hydrogen"; and

■ c. Revising the definition for "Pesticide active ingredient or PAI".

The revisions and additions read as follows:

§ 63.1361 Definitions.

* * * * *

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

* * * * *

Pesticide active ingredient or PAI means any material that is an active ingredient within the meaning of FIFRA section 2(a); that is used to produce an insecticide, herbicide, or fungicide end use pesticide product; that consists of one or more organic compounds; and that must be labeled in accordance with 40 CFR part 156 for transfer, sale, or distribution. These materials are typically described by North American Industrial Classification System (NAICS) Codes 325199 and 32532 (i.e., previously known as Standard Industrial Classification System Codes 2869 and 2879). These materials are identified by product classification codes 01, 21, 02, 04, 44, 07, 08, and 16 in block 19 on the 1999 version of EPA form 3540-16, the Pesticides Report for Pesticide-Producing Establishments. The materials represented by these codes are: insecticides; insecticide-fungicides; fungicides; herbicides; herbicide-fungicides; plant regulators; defoliants, desiccants; or multi-use active ingredients.

* * * * *

■ 20. Section 63.1362 is amended by revising paragraph (i) to read as follows:

§ 63.1362 Standards.

* * * * *

(i) *Opening of a safety device.* The owner or operator that opens a safety device, as defined in § 63.1361, is not exempt from applicable standards in order to avoid unsafe conditions. If opening a safety device results in the failure to meet any applicable standard, the owner or operator must still comply with the general duty to minimize emissions. If opening a safety device results in a deviation or excess emissions, such events must be reported as specified in § 63.1368(i). If the owner or operator attributes the event to a malfunction and intends to assert an affirmative defense, the owner or operator is subject to § 63.1360(k).

* * * * *

■ 21. Section 63.1363 is amended by:

■ a. Revising the first sentence of paragraph (b) introductory text;

■ b. Revising paragraph (b)(2);

■ c. Adding paragraph (b)(4);

■ d. Revising paragraphs (g)(2)(ii)(A), (g)(2)(iii)(A), and (g)(2)(iii)(B);

■ e. Revising the second sentence of paragraph (g)(4)(v)(A);

■ f. Revising paragraph (g)(6) introductory text;

■ g. Adding paragraph (g)(11);

■ h. Adding a sentence after the first sentence of paragraph (h)(2) introductory text;

■ i. Adding paragraph (h)(2)(iv);

■ j. Revising the first sentence of paragraph (h)(3)(i);

■ k. Revising paragraph (h)(3)(ii)(j); and

■ l. Adding paragraph (h)(3)(v).

The revisions and additions read as follows:

§ 63.1363 Standards for equipment leaks.

* * * * *

(b) *References.* The owner or operator shall comply with the provisions of subpart H of this part as specified in paragraphs (b)(1) through (3) of this section and with paragraph (b)(4) of this section for pressure relief devices. * * *

(2) The owner or operator shall comply with §§ 63.164, 63.166, 63.169, 63.177, and 63.179 of subpart H of this part in their entirety, except that when these sections reference other sections of subpart H of this part, the owner or operator shall comply with the revised sections as specified in paragraphs (b)(1), (3), and (4) of this section. Section 63.164 of subpart H of this part applies to compressors. Section 63.166 of subpart H of this part applies to sampling connection systems. Section 63.169 of subpart H of this part applies to: pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure

relief devices in liquid service. Section 63.177 of subpart H of this subpart applies to general alternative means of emission limitation. Section 63.179 of subpart H of this part applies to alternative means of emission limitation for enclosed-vented process units.

* * * * *

(4) *Requirements for pressure relief devices.* Except as specified in paragraph (b)(4)(iv) of this section, the owner or operator must comply with the operating and pressure release requirements specified in paragraphs (b)(4)(i) and (ii) of this section for pressure relief devices in organic HAP gas or vapor service. Except as specified in paragraph (b)(4)(iv) of this section, the owner or operator must also comply with the pressure release management requirements specified in paragraph (b)(4)(iii) of this section for all pressure relief devices in organic HAP service.

(i) *Operating requirements.* Except during a pressure release event, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as detected by Method 21 of 40 CFR part 60, appendix A.

(ii) *Pressure release requirements.* For pressure relief devices in organic HAP gas or vapor service, comply with paragraphs (b)(4)(ii)(A) or (B) of this section, as applicable.

(A) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as detected by Method 21 of 40 CFR part 60, appendix A, no later than 5 calendar days after the pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm above background, except as provided in § 63.171.

(B) If the pressure relief device consists of or includes a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release, except as provided in § 63.171.

(iii) *Pressure release management.* Except as specified in paragraph (b)(4)(iv) of this section, pressure releases to the atmosphere from pressure relief devices in organic HAP service are prohibited, and the owner or operator must comply with the requirements specified in paragraphs (b)(4)(iii)(A) and (B) of this section for all pressure relief devices in organic HAP service.

(A) For each pressure relief device in organic HAP service, the owner or operator must equip each pressure relief device with a device(s) or use a monitoring system that is capable of:

(1) Identifying the pressure release;
(2) Recording the time and duration of each pressure release; and

(3) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.

(B) If any pressure relief device in organic HAP service releases to atmosphere as a result of a pressure release event, the owner or operator must calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in paragraph (h)(3)(v) of this section. Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

(iv) *Pressure relief devices routed to a control device, process, or drain system.* If a pressure relief device in organic HAP service is designed and operated to route all pressure releases through a closed vent system to a control device, process, or drain system, the owner or operator is not required to comply with paragraphs (b)(4)(i), (ii), or (iii) (if applicable) of this section. Both the closed vent system and control device (if applicable) must meet the requirements of § 63.172. The drain system (if applicable) must meet the requirements of § 63.136.

* * * * *

(g) * * *

(2) * * *

(ii) * * *

(A) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, subject to the provisions of paragraphs (b)(4)(iv) or (c)(7) of this section or § 63.164(h).

* * * * *

(iii) * * *

(A) A list of identification numbers for pressure relief devices subject to the provisions in paragraph (b)(4)(i) of this section.

(B) A list of identification numbers for pressure relief devices equipped with rupture disks, subject to the provisions of paragraph (b)(4)(ii)(B) of this section.

* * * * *

(4) * * *

(v) * * *

(A) * * * The written procedures must be maintained at the plant site. * * *

(6) *Records of compressor and pressure relief device compliance tests.* The dates and results of each compliance test required for compressors subject to the provisions in § 63.164(i) and the dates and results of the Method 21 of 40 CFR part 60, appendix A, monitoring following a pressure release for each pressure relief device subject to the provisions in paragraphs (b)(4)(i) and (ii) of this section. The results shall include:

* * * * *

(11) *Records of pressure releases to the atmosphere from pressure relief devices.* For pressure relief devices in organic HAP service subject to paragraph (b)(4)(iii) of this section, keep records of each pressure release to the atmosphere, including the following information:

(i) The source, nature, and cause of the pressure release.

(ii) The date, time, and duration of the pressure release.

(iii) The quantity of total HAP emitted during the pressure release and the calculations used for determining this quantity.

(iv) The actions taken to prevent this pressure release.

(v) The measures adopted to prevent future such pressure releases.

(h) * * *

(2) *Notification of compliance status report.* * * * For pressure relief devices subject to the requirements of paragraph (b)(4)(iii) of this section, the owner or operator shall submit the information listed in paragraph (h)(2)(iv) of this section in the Notification of Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring. * * *

(iv) For pressure relief devices in organic HAP service, a description of the device or monitoring system to be implemented, including the pressure relief devices and process parameters to be monitored (if applicable), a description of the alarms or other methods by which operators will be notified of a pressure release, and a description of how the owner or operator will determine the information to be recorded under paragraphs (g)(11)(ii) and (iii) of this section (i.e., the duration of the pressure release and the methodology and calculations for determining of the quantity of total HAP emitted during the pressure release).

(3) * * *

(i) A report containing the information in paragraphs (h)(3)(ii) through (v) of this section shall be submitted semiannually. * * *

(ii) * * *

(j) The results of all monitoring to show compliance with §§ 63.164(i) and

63.172(f) conducted within the semiannual reporting period.

* * *

(v) For pressure relief devices in organic HAP service, Periodic Reports must include the information specified in paragraphs (h)(3)(v)(A) through (C) of this section.

(A) For pressure relief devices in organic HAP service subject to paragraph (b)(4) of this section, report confirmation that all monitoring to show compliance was conducted within the reporting period.

(B) For pressure relief devices in organic HAP gas or vapor service subject to paragraph (b)(4)(ii) of this section, report any instrument reading of 500 ppm above background or greater, more than 5 calendar days after the pressure release.

(C) For pressure relief devices in organic HAP service subject to paragraph (b)(4)(iii) of this section, report each pressure release to the atmosphere, including the following information:

(1) The source, nature, and cause of the pressure release.

(2) The date, time, and duration of the pressure release.

(3) The quantity of total HAP emitted during the pressure release and the method used for determining this quantity.

(4) The actions taken to prevent this pressure release.

(5) The measures adopted to prevent future such pressure releases.

■ 22. Section 63.1364 is amended by revising paragraphs (a)(1) and (b) to read as follows:

§ 63.1364 Compliance dates.

(a) * * *

(1) An owner or operator of an existing affected source must comply with the provisions in this subpart (except § 63.1363(b)(4)(iii)) by December 23, 2003. Compliance with the pressure relief device monitoring provisions of § 63.1363(b)(4)(iii) shall occur no later than March 27, 2017.

* * *

(b) *Compliance dates for new and reconstructed sources.* An owner or operator of a new or reconstructed affected source must comply with the provisions of this subpart (except § 63.1363(b)(4)(iii)) on June 23, 1999 or upon startup, whichever is later. New or reconstructed affected sources that commenced construction after November 10, 1997, but on or before January 9, 2012, must be in compliance with the pressure relief device monitoring provisions of § 63.1363(b)(4)(iii) no later than March

27, 2017. New or reconstructed sources that commenced construction after January 9, 2012, must be in compliance with the pressure relief device monitoring provisions of § 63.1363(b)(4)(iii) upon initial startup or by March 27, 2014, whichever is later.

■ 23. Section 63.1365 is amended by:

■ a. Revising paragraph (b) introductory text; and

■ b. Removing and reserving paragraph (h)(3).

The revisions read as follows:

§ 63.1365 Test methods and initial compliance procedures.

* * *

(b) *Test methods and conditions.* When testing is conducted to measure emissions from an affected source, the test methods specified in paragraphs (b)(1) through (9) of this section shall be used. Compliance and performance tests shall be performed under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested and as specified in paragraphs (b)(10) and (11) of this section. Representative conditions exclude periods of startup and shutdown unless specified by the Administrator or an applicable subpart. The owner or operator may not conduct performance tests during periods of malfunction. The owner or operator 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. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

* * *

■ 24. Section 63.1366 is amended by adding a sentence to the end of paragraph (b)(1)(ii) introductory text; and revising paragraph (b)(8).

The revisions and additions read as follows:

§ 63.1366 Monitoring and inspection requirements.

* * *

(b) * * *

(1) * * *

(ii) *Scrubbers.* * * * Alternatively, for halogen scrubbers, the owner or operator may comply with the requirements specified in § 63.994(c).

* * *

(8) *Violations.* Exceedances of parameters monitored according to the provisions of paragraphs (b)(1)(ii),

(b)(1)(iv) through (ix), and (b)(5) of this section, or excursions as defined by paragraphs (b)(7)(i) and (ii) of this section, constitute violations of the operating limit according to paragraphs (b)(8)(i) and (ii) of this section.

Exceedances of the temperature limit monitored according to the provisions of paragraph (b)(1)(iii) of this section or exceedances of the outlet concentrations monitored according to the provisions of paragraph (b)(1)(x) of this section constitute violations of the emission limit according to paragraphs (b)(8)(i) and (ii) of this section. Exceedances of the outlet concentrations monitored according to the provisions of paragraph (b)(5) of this section constitute violations of the emission limit according to the provisions of paragraph (b)(8)(iii) of this section.

(i) For episodes occurring more than once per day, exceedances of established parameter limits or excursions will result in no more than one violation per operating day for each monitored item of equipment utilized in the process.

(ii) For control devices used for more than one process in the course of an operating day, exceedances or excursions will result in no more than one violation per operating day, per control device, for each process for which the control device is in service.

(iii) Exceedances of the 20 or 50 ppmv TOC outlet emission limit, averaged over the operating day, will result in no more than one violation per day per control device. Exceedances of the 20 or 50 ppmv HCl and chlorine outlet emission limit, averaged over the operating day, will result in no more than one violation per day per control device.

* * *

■ 25. Section 63.1367 is amended by revising paragraphs (a)(3) and (e) to read as follows:

§ 63.1367 Recordkeeping requirements.

(a) * * *

(3) *Records of malfunctions.* (i) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time, and duration of each failure.

(ii) For each failure to meet an applicable standard, 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 in accordance with § 63.1360(e)(4), and any corrective

actions taken to return the affected unit to its normal or usual manner of operation.

(e) The owner or operator of an affected source subject to the requirements for heat exchanger systems in § 63.1362(g) shall retain the records as specified in § 63.104(f)(1)(i) through (iv).

- 26. Section 63.1368 is amended by:
- a. Revising the seventh sentence of paragraph (e) introductory text;
 - b. Revising paragraph (i); and
 - c. Adding paragraph (p).

The revisions and additions read as follows:

§ 63.1368 Reporting requirements.

(e) *Precompliance plan.* * * * To change any of the information submitted in the Precompliance plan or to submit a Precompliance plan for the first time after the compliance date, the owner or operator shall notify the Administrator at least 90 days before the planned change is to be implemented; the change shall be considered approved if the Administrator either approves the change in writing, or fails to disapprove the change in writing within 90 days of receipt of the change. * * *

(i) *Reports of malfunctions.* If a source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to

meet an applicable standard. For each instance, report the date, time, 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.

(p) *Electronic reporting.* Within 60 days after the date of completing each performance test (as defined in § 63.2), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, required by this subpart according to the methods specified in paragraphs (p)(1) or (2) of this section.

(1) For data collected using test methods supported by the EPA-provided software, the owner or operator shall submit the results of the performance test to the EPA by direct computer-to-computer electronic transfer via EPA-provided software, unless otherwise approved by the Administrator. Owners or operators, who claim that some of the information being submitted for performance tests is confidential business information (CBI), must submit a complete file using EPA-provided software that includes information claimed to be CBI on a compact disk, flash drive, or other commonly used electronic storage media to the EPA. The electronic media

must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA by direct computer-to-computer electronic transfer via EPA-provided software.

(2) For any performance test conducted using test methods that are not compatible with the EPA-provided software, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in § 60.4.

■ 27. Table 1 to Subpart MMM of Part 63 is amended by:

- a. Removing entry § 63.6(e);
- b. Adding entries § 63.6(e)(1)(i), § 63.6(e)(1)(ii), § 63.6(e)(1)(iii), and § 63.6(e)(3);
- c. Removing entry § 63.6(f);
- d. Adding entries § 63.6(f)(1) and § 63.6(f)(2)–(3);
- e. Revising entry § 63.7(e)(1);
- f. Removing entry § 63.8(b)(3)–(c)(3);
- g. Adding entries § 63.8(b)(3), § 63.8(c)(1)(i), § 63.8(c)(1)(ii), § 63.8(c)(1)(iii), and § 63.8(c)(2)–(3);
- h. Revising entry § 63.8(d)–(f)(3);
- i. Removing entry § 63.10(c);
- j. Adding entries § 63.10(c)(1)–(14) and § 63.10(c)(15); and
- k. Revising entry § 63.10(d)(5).

The revisions and additions read as follows:

TABLE 1 TO SUBPART MMM OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART MMM

Reference to subpart A	Applies to subpart MMM	Explanation
§ 63.6(e)(1)(i)	No	See § 63.1360(e)(4) for general duty requirement.
§ 63.6(e)(1)(ii)	No.	
§ 63.6(e)(1)(iii)	Yes.	
§ 63.6(e)(3)	No.	
§ 63.6(f)(1)	No.	
§ 63.6(f)(2)–(3)	Yes.	
§ 63.7(e)(1)	No	See § 63.1365(b).
§ 63.8(b)(3)	Yes.	
§ 63.8(c)(1)(i)	No.	
§ 63.8(c)(1)(ii)	Yes.	
§ 63.8(c)(1)(iii)	No.	
§ 63.8(c)(2)–(3)	Yes.	
§ 63.8(d)–(f)(3)	Yes	Except the last sentence of § 63.8(d)(3), which shall be replaced with “The program of corrective action should be included in the plan required under § 63.8(d)(2).” for the purposes of this subpart.
§ 63.10(c)(1)–(14)	Yes.	
§ 63.10(c)(15)	No.	

TABLE 1 TO SUBPART MMM OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART MMM—Continued

Reference to subpart A	Applies to subpart MMM	Explanation
§ 63.10(d)(5)	No	See § 63.1368(i) for malfunction reporting requirements.

Subpart PPP—[Amended]

- 28. Section 63.1420 is amended by:
- a. Revising paragraph (a)(4) introductory text;
- b. Revising paragraphs (a)(4)(iv) and (c)(1);
- c. Revising paragraph (d) introductory text;
- d. Revising the heading for paragraph (e)(8);
- e. Revising paragraph (h); and
- f. Adding paragraph (i).

The revisions and additions read as follows:

§ 63.1420 Applicability and designation of affected sources.

(a) * * *

(4) The affected source also includes the emission points and components specified in paragraphs (a)(4)(i) through (vi) of this section that are associated with a PMPU (or a group of PMPUs) making up an affected source, as defined in § 63.1423.

* * * * *

(iv) Components required by or utilized as a method of compliance with this subpart, which may include control techniques and recovery devices.

* * * * *

(c) * * *

(1) Components and equipment that do not contain organic HAP or that contain organic HAP as impurities only and are located at a PMPU that is part of an affected source.

* * * * *

(d) *Processes excluded from the affected source.* The processes specified in paragraphs (d)(1) through (3) of this section are not part of the affected source and are not subject to the requirements of both this subpart and subpart A of this part.

* * * * *

(e) * * *

(8) *Requirements for flexible process units that are not PMPUs.* * * *

(h) *Applicability of this subpart.* (1) The emission limitations set forth in this subpart and the emission limitations referred to in this subpart shall apply at all times except during periods of nonoperation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies.

(2) The emission limitations set forth in 40 CFR part 63, subpart H, as referred to in the equipment leak provisions in § 63.1434, shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which § 63.1434 applies.

(3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with this subpart during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment if the shutdown would contravene requirements applicable to such items of equipment.

(4) *General duty.* At all times, the owner or operator 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 the owner or operator 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.

(i) *Affirmative defense for violation of emission standards during malfunction.* In response to an action to enforce the standards set forth in this subpart, the owner or operator may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 63.2. Appropriate penalties may be assessed if the owner or operator fails to meet their burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) Assertion of affirmative defense.

To establish the affirmative defense in any action to enforce such a standard, the owner or operator must timely meet the reporting requirements in paragraph (i)(2) of this section, and must prove by a preponderance of evidence that:

(i) The violation:

(A) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when a violation occurred; and

(iii) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(iv) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis

shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(2) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator, with all necessary supporting documentation, that explains how it has met the requirements set forth in paragraph (i)(1) of this section. This affirmative defense report shall be included in the first periodic compliance report, deviation report, or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

- 29. Section 63.1422 is amended by:
- a. Revising paragraph (b);
 - b. Revising paragraph (d) introductory text;
 - c. Revising the second sentence of paragraph (d)(2)(iv);
 - d. Adding paragraph (d)(6); and
 - e. Revising paragraph (e)(1).

The revisions and additions read as follows:

§ 63.1422 Compliance dates and relationship of this rule to existing applicable rules.

(b) New affected sources that commence construction or reconstruction after September 4, 1997 shall be in compliance with this subpart (except § 63.1434(c)(3)) upon initial start-up or by June 1, 1999, whichever is later. New affected sources that commenced construction or reconstruction after September 4, 1997, but on or before January 9, 2012, shall be in compliance with the pressure relief device monitoring requirements of § 63.1434(c)(3) by March 27, 2017. New affected sources that commence construction or reconstruction after January 9, 2012, shall be in compliance with the pressure relief device monitoring requirements of § 63.1434(c)(3) upon initial startup or by March 27, 2014, whichever is later.

(d) Except as provided for in paragraphs (d)(1) through (6) of this section, existing affected sources shall be in compliance with § 63.1434 no later than December 1, 1999 unless an

extension has been granted as specified in paragraph (e) of this section.

(2) * * *

(iv) * * * The request for a compliance extension shall contain the information specified in § 63.6(i)(6)(i)(A) and (B). * * *

(6) Compliance with the pressure relief device monitoring provisions of § 63.1434(c)(3) shall occur no later than March 27, 2017.

(e) * * *

(1) A request for an extension of compliance shall include the data described in § 63.6(i)(6)(i)(A) and (B).

- 30. Section 63.1423 is amended by:
- a. Removing the terms "Relief valve (subpart G)" and "Start-up, shutdown, and malfunction plan (subpart F)" and adding the terms "Pressure release (subpart H)" and "Pressure relief device or valve (subpart H)" in paragraph (a); and
 - b. Revising the definition for "Process vent" and adding the definition for "Affirmative defense" in alphabetical order to paragraph (b).

The revisions and additions read as follows:

§ 63.1423 Definitions.

(b) * * *

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Process vent means a point of emission from a unit operation having a gaseous stream that is discharged to the atmosphere either directly or after passing through one or more combustion, recovery, or recapture devices. A process vent from a continuous unit operation is a gaseous emission stream containing more than 0.005 weight-percent total organic HAP. A process vent from a batch unit operation is a gaseous emission stream containing more than 225 kilograms per year (500 pounds per year) of organic HAP emissions. Unit operations that may have process vents are condensers, distillation units, reactors, or other unit operations within the PMPU. Process vents exclude pressure relief device discharges, gaseous streams routed to a fuel gas system(s), and leaks from equipment regulated under § 63.1434. A gaseous emission stream is no longer considered to be a process vent after the

stream has been controlled and monitored in accordance with the applicable provisions of this subpart.

■ 31. Section 63.1427 is amended by:

- a. Revising paragraph (j)(2) introductory text; and
- b. Revising paragraph (k)(3)(ii).

The revisions read as follows:

§ 63.1427 Process vent requirements for processes using extended cookout as an epoxide emission reduction technique.

(j) * * *

(2) The owner or operator shall maintain the records specified in paragraphs (j)(2)(i) through (v) of this section.

(k) * * *

(3) * * *

(ii) Notification of each batch cycle when the time and duration of epoxide emissions before the end of the ECO, recorded in accordance with paragraph (j)(2)(v) of this section, exceed the time and duration of the emission episodes during the initial epoxide emission percentage reduction determination, as recorded in paragraph (j)(1)(viii) of this section.

■ 32. Section 63.1428 is amended by revising paragraph (h)(2)(ii) to read as follows:

§ 63.1428 Process vent requirements for group determination of PMPUs using a nonepoxide organic HAP to make or modify the product.

(h) * * *

(2) * * *

(ii) Where the recalculated TRE index value is less than or equal to 1.0, or, where the TRE index value before the process change was greater than 4.0 and the recalculated TRE index value is less than or equal to 4.0 but greater than 1.0, the owner or operator shall submit a report as specified in the process vent reporting and recordkeeping provisions in § 63.1430(i) or (j), and shall comply with the appropriate provisions in the process vent control requirements in § 63.1425 by the dates specified in § 63.1422 (the section describing compliance dates for sources subject to this subpart).

■ 33. Section 63.1429 is amended by:

- a. Revising the last sentence of paragraph (c) introductory text; and
- b. Revising the first two sentences of paragraph (d)(1).

The revisions read as follows:

§ 63.1429 Process vent monitoring requirements.

* * * * *

(c) *Monitoring of bypass lines.* * * * Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief devices needed for safety purposes are not subject to paragraphs (c)(1) or (2) of this section.

* * * * *

(d) * * *

(1) For each parameter monitored under paragraphs (a) or (b) of this section, the owner or operator shall establish a level, defined as either a maximum or minimum operating parameter as denoted in Table 7 of this subpart (the table listing the operating parameters for which monitoring levels are required to be established for process vent streams), that indicates that the combustion, recovery, or recapture device is operated in a manner to ensure compliance with the provisions of this subpart. The level shall be established in accordance with the procedures specified in § 63.1438(a) through (d), as applicable. * * *

■ 34. Section 63.1430 is amended by revising the last sentence of paragraph (d)(2)(i) to read as follows:

§ 63.1430 Process vent reporting and recordkeeping requirements.

* * * * *

(d) * * *

(2) * * *

(i) * * * In addition, monitoring data recorded during periods of non-operation of the process (or specific portion thereof) resulting in cessation of organic HAP emissions shall not be included in computing the daily averages.

* * * * *

■ 35. Section 63.1434 is amended by:
■ a. Revising paragraphs (a) and the last sentence of paragraph (d); and
■ b. Adding paragraph (c).

The revisions read as follows:

§ 63.1434 Equipment leak provisions.

(a) The owner or operator of each affected source shall comply with the HON equipment leak requirements in 40 CFR part 63, subpart H for all equipment in organic HAP service, except § 63.165 and as specified in paragraphs (b) through (h) of this section.

* * * * *

(c) *Requirements for pressure relief devices.* Except as specified in paragraph (c)(4) of this section, the owner or operator must comply with the operating and pressure release requirements specified in paragraphs

(c)(1) and (2) of this section for pressure relief devices in organic HAP gas or vapor service. Except as specified in paragraph (c)(4) of this section, the owner or operator must also comply with the pressure release management requirements specified in paragraph (c)(3) of this section for all pressure relief devices in organic HAP service.

(1) *Operating requirements.* Except during a pressure release event, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as detected by Method 21 of 40 CFR part 60, appendix A.

(2) *Pressure release requirements.* For pressure relief devices in organic HAP gas or vapor service, comply with paragraphs (c)(2)(i) or (ii) of this section, as applicable.

(i) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as detected by Method 21 of 40 CFR part 60, appendix A, no later than 5 calendar days after the pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm above background, except as provided in § 63.171.

(ii) If the pressure relief device consists of or includes a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release, except as provided in § 63.171.

(3) *Pressure release management.* Except as specified in paragraph (c)(4) of this section, pressure releases to the atmosphere from pressure relief devices in organic HAP service are prohibited, and the owner or operator must comply with the requirements specified in paragraphs (c)(3)(i) and (ii) of this section for all pressure relief devices in organic HAP service.

(i) For each pressure relief device in organic HAP service, the owner or operator must equip each pressure relief device with a device(s) or use a monitoring system that is capable of:

(A) Identifying the pressure release;
(B) Recording the time and duration of each pressure release; and

(C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the

pressure relief valve stem, flow monitor, or pressure monitor.

(ii) If any pressure relief device in organic HAP service releases to atmosphere as a result of a pressure release event, the owner or operator must calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in § 63.1439(e)(6)(ix). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

(4) *Pressure relief devices routed to a control device, process, or drain system.* If a pressure relief device in organic HAP service is designed and operated to route all pressure releases through a closed vent system to a control device, process, or drain system, the owner or operator is not required to comply with paragraphs (c)(1), (2), or (3) (if applicable) of this section. Both the closed vent system and control device (if applicable) must meet the requirements of § 63.172. The drain system (if applicable) must meet the requirements of § 63.136.

(d) * * * The Initial Notification shall be submitted no later than June 1, 2000 for existing sources.

* * * * *

■ 36. Section 63.1437 is amended by revising paragraph (a) introductory text and the first sentence of paragraph (a)(1) introductory text.

The revisions read as follows:

§ 63.1437 Additional requirements for performance testing.

(a) Performance testing shall be conducted in accordance with § 63.7(a)(1), (a)(3), (d), (e)(2), (e)(4), (g), and (h), with the exceptions specified in paragraphs (a)(1) through (4) of this section and the additions specified in paragraph (b) of this section. Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown unless specified by the Administrator or an applicable subpart. The owner or operator may not conduct performance tests during periods of malfunction. The owner or operator 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. Upon request, the owner or operator shall make available to the Administrator such records as

may be necessary to determine the conditions of performance tests.

(1) Performance tests shall be conducted according to the general provisions' performance testing requirements in § 63.7(e)(2), except that for all emission sources except process vents from batch unit operations, performance tests shall be conducted during maximum representative operating conditions for the process achievable during one of the time periods described in paragraph (a)(1)(i) of this section, without causing any of the situations described in paragraphs (a)(1)(ii) or (iii) of this section to occur.

- 37. Section 63.1438 is amended by:
- a. Revising paragraphs (e)(1) introductory text and (e)(2);
 - b. Revising paragraphs (f)(1)(v), (f)(3)(ii)(B), and the last sentence of paragraph (f)(4); and
 - c. Removing paragraph (g).

The revisions read as follows:

§ 63.1438 Parameter monitoring levels and excursions.

* * * * *

(e) * * *

(1) Each excursion, as defined in paragraphs (f)(1)(i), (f)(2)(i)(A), (f)(2)(ii), (f)(3)(i), and (f)(4) of this section, constitutes a violation of the provisions of this subpart in accordance with paragraphs (e)(1)(i), (ii), or (iii) of this section.

* * * * *

(2) Each excursion, as defined in paragraphs (f)(1)(ii), (f)(1)(iii), (f)(2)(i)(B), and (f)(3)(ii) of this section constitutes a violation of the operating limit.

(f) * * *

(1) * * *

(v) Periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies, are not considered to be part of the period of combustion, recovery, or recapture device operation, for the purposes of paragraphs (f)(1)(ii) and (iii) of this section.

* * * * *

(3) * * *

(ii) * * *

(B) Subtract the time during the periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies, from the total amount of time determined above in paragraph (f)(3)(ii)(A) of this section, to obtain the operating time used to determine if monitoring data are insufficient.

* * * * *

(4) * * * For each excursion, the owner or operator shall be deemed out of compliance with the provisions of this subpart, in accordance with paragraph (e) of this section.

* * * * *

- 38. Section 63.1439 is amended by:
- a. Revising paragraphs (b)(1) and (c);
 - b. Revising the first two sentences of paragraph (d) introductory text;
 - c. Revising paragraph (d)(7);
 - d. Adding paragraph (d)(10);
 - e. Revising the first sentence of paragraph (e) introductory text;
 - f. Revising the last sentence of paragraph (e)(3) introductory text;
 - g. Revising the first sentence of paragraph (e)(4) introductory text;
 - h. Adding a sentence to the end of paragraph (e)(4)(i);
 - i. Revising the last sentence of paragraph (e)(4)(ii);
 - j. Revising paragraph (e)(4)(v);
 - k. Removing and reserving paragraph (e)(4)(vi);
 - l. Revising paragraph (e)(4)(vii)(B);
 - m. Adding a sentence to the end of paragraph (e)(5) introductory text;
 - n. Adding a sentence to the end of paragraph (e)(5)(vii);
 - o. Adding paragraph (e)(5)(viii);
 - p. Revising the first sentence of paragraph (e)(6) introductory text;
 - q. Revising paragraphs (e)(6)(iii)(D)(3), (e)(6)(iii)(E), (e)(6)(viii)(A)(1), and (e)(6)(viii)(D);
 - r. Adding paragraphs (e)(6)(ix) and (e)(9);
 - s. Revising the first sentence of paragraph (h)(1)(i);
 - t. Revising paragraph (h)(1)(ii);
 - u. Revising the first sentence of paragraph (h)(1)(iii); and
 - v. Revising paragraphs (h)(2)(iii) and (h)(2)(iv).

The revisions and additions read as follows:

§ 63.1439 General recordkeeping and reporting provisions.

* * * * *

(b) * * *

(1) *Malfunction recordkeeping and reporting.* (i) *Records of malfunctions.* The owner or operator shall keep the records specified in paragraphs (b)(1)(i)(A) through (C) of this section.

(A) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time, and duration of each failure.

(B) For each failure to meet an applicable standard, 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.

(C) Record actions taken to minimize emissions in accordance with § 63.1420(h)(4), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(ii) *Reports of malfunctions.* If a source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to meet an applicable standard. For each instance, report the date, time, 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.

* * * * *

(c) *Subpart H requirements.* The owner or operator of an affected source shall comply with the HON equipment leak reporting and recordkeeping requirements in 40 CFR part 63, subpart H, except as specified in § 63.1434(b) through (h).

(d) *Recordkeeping and documentation.* The owner or operator required to keep continuous records shall keep records as specified in paragraphs (d)(1) through (10) of this section, unless an alternative recordkeeping system has been requested and approved as specified in paragraph (g) of this section, and except as provided in paragraph (h) of this section. If a monitoring plan for storage vessels pursuant to § 63.1432(i) requires continuous records, the monitoring plan shall specify which provisions, if any, of paragraphs (d)(1) through (10) of this section apply.

(7) Monitoring data recorded during periods identified in paragraphs (d)(7)(i) and (ii) of this section shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or combustion, recovery, or recapture device operation when monitors are not operating.

(i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; or

(ii) Periods of non-operation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

* * * * *

(10) For pressure relief devices in organic HAP service, keep records of the information specified in paragraphs (d)(10)(i) through (v) of this section, as applicable.

(i) A list of identification numbers for pressure relief devices that the owner or

operator elects to equip with a closed-vent system and control device, subject to the provisions in § 63.1434(c)(4).

(ii) A list of identification numbers for pressure relief devices subject to the provisions in § 63.1434(c)(1).

(iii) A list of identification numbers for pressure relief devices equipped with rupture disks, subject to the provisions in § 63.1434(c)(2)(ii).

(iv) The dates and results of the Method 21 of 40 CFR part 60, appendix A, monitoring following a pressure release for each pressure relief device subject to the provisions in § 63.1434(c)(1) and (2). The results shall include:

(A) The background level measured during each compliance test.

(B) The maximum instrument reading measured at each piece of equipment during each compliance test.

(v) For pressure relief devices in organic HAP service subject to § 63.1434(c)(3), keep records of each pressure release to the atmosphere, including the following information:

(A) The source, nature, and cause of the pressure release.

(B) The date, time, and duration of the pressure release.

(C) The quantity of total HAP emitted during the pressure release and the calculations used for determining this quantity.

(D) The actions taken to prevent this pressure release.

(E) The measures adopted to prevent future such pressure releases.

(e) *Reporting and notification.* In addition to the reports and notifications required by 40 CFR part 63, subpart A, as specified in this subpart, the owner or operator of an affected source shall prepare and submit the reports listed in paragraphs (e)(3) through (9) of this section, as applicable. * * *

(3) * * * The General Provisions' Initial Notification requirements in § 63.9(b)(2) and (3) shall not apply for the purposes of this subpart.

* * *

(4) *Precompliance Report.* The owner or operator of an affected source requesting an extension for compliance; requesting approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping, or alternative controls; or requesting approval to establish parameter monitoring levels according to the procedures contained in § 63.1438(c) or (d) shall submit a Precompliance Report according to the schedule described in paragraph (e)(4)(i) of this section. * * *

(i) * * * To submit a Precompliance Report for the first time after the

compliance date to request an extension for compliance; request approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping, or alternative controls; or request approval to establish parameter monitoring levels according to the procedures contained in § 63.1438(c) or (d), the owner or operator shall notify the Administrator at least 90 days before the planned change is to be implemented; the change shall be considered approved if the Administrator either approves the change in writing, or fails to disapprove the change in writing within 45 days of receipt.

(ii) * * * The request for a compliance extension shall include the data outlined in the General Provisions' compliance requirements in § 63.6(i)(6)(i)(A) and (B), as required in § 63.1422(e)(1).

* * *

(v) The owner or operator shall report the intent to use an alternative emission standard to comply with the provisions of this subpart in the Precompliance Report. The Administrator may deem an alternative emission standard to be equivalent to the standard required by the subpart, under the procedures outlined in the General Provisions' requirements for use of an alternative nonopacity emission standard, in § 63.6(g).

* * *

(vii) * * *

(B) Supplements to the Precompliance Report may be submitted to request approval to use alternative monitoring parameters, as specified in paragraph (e)(4)(iii) of this section; to use alternative continuous monitoring and recordkeeping, as specified in paragraph (e)(4)(iv) of this section; or to use alternative controls, as specified in paragraph (e)(4)(v) of this section.

* * *

(5) * * * For pressure relief devices subject to the requirements of § 63.1434(c)(3), the owner or operator shall submit the information listed in paragraph (e)(5)(viii) of this section in the Notification of Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring.

* * *

(vii) * * * An owner or operator who transfers a Group 1 process vent for disposal pursuant to § 63.113(i) shall include in the Notification of Compliance Status the name and location of the transferee, and the identification of the Group 1 process vent.

(viii) For pressure relief devices in organic HAP service, a description of the device or monitoring system to be implemented, including the pressure relief devices and process parameters to be monitored (if applicable), a description of the alarms or other methods by which operators will be notified of a pressure release, and a description of how the owner or operator will determine the information to be recorded under paragraphs (d)(10)(v)(B) and (C) of this section (i.e., the duration of the pressure release and the methodology and calculations for determining of the quantity of total HAP emitted during the pressure release).

(6) *Periodic Reports.* For existing and new affected sources, the owner or operator shall submit Periodic Reports as specified in paragraphs (e)(6)(i) through (ix) of this section. * * *

(iii) * * *

(D) * * *

(3) For gas streams sent for disposal pursuant to § 63.113(i) or for process wastewater streams sent for treatment pursuant to § 63.132(g), reports of changes in the identity of the treatment facility or transferee.

(E) The information in paragraph (b)(1)(ii) of this section for reports of malfunctions.

* * *

(viii) * * *

(A) * * *

(1) A combustion, recovery, or recapture device for a particular emission point or process section has one or more excursions, as defined in § 63.1438(f), in two consecutive semiannual reporting periods; or

* * *

(D) After quarterly reports have been submitted for an emission point for 1 year without one or more excursions occurring (during that year), the owner or operator may return to semiannual reporting for the emission point or process section.

(ix) For pressure relief devices in organic HAP service, Periodic Reports must include the information specified in paragraphs (e)(6)(ix)(A) through (C) of this section.

(A) For pressure relief devices in organic HAP service subject to § 63.1434(c), report confirmation that all monitoring to show compliance was conducted within the reporting period.

(B) For pressure relief devices in organic HAP gas or vapor service subject to § 63.1434(c)(2), report any instrument reading of 500 ppm above background or greater, more than 5 calendar days after the pressure release.

(C) For pressure relief devices in organic HAP service subject to

§ 63.1434(c)(3), report each pressure release to the atmosphere, including the following information:

(1) The source, nature, and cause of the pressure release.

(2) The date, time, and duration of the pressure release.

(3) The quantity of total HAP emitted during the pressure release and the method used for determining this quantity.

(4) The actions taken to prevent this pressure release.

(5) The measures adopted to prevent future such pressure releases.

(9) *Electronic reporting.* Within 60 days after the date of completing each performance test (as defined in § 63.2), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, required by this subpart according to the methods specified in paragraphs (e)(9)(i) or (ii) of this section.

(i) For data collected using test methods supported by the EPA-provided software, the owner or operator shall submit the results of the performance test to the EPA by direct computer-to-computer electronic transfer via EPA-provided software, unless otherwise approved by the Administrator. Owners or operators, who claim that some of the information being submitted for performance tests is confidential business information (CBI), must submit a complete file using EPA-provided software that includes information claimed to be CBI on a compact disk, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same

file with the CBI omitted must be submitted to the EPA by direct computer-to-computer electronic transfer via EPA-provided software.

(ii) For any performance test conducted using test methods that are not compatible with the EPA-provided software, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in § 60.4.

* * *

(h) * * *

(1) * * *

(i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation (e.g., a temperature reading of -200°C on a boiler), and will alert the operator by alarm or other means. * * *

(ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this running average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (h)(1)(ii)(A) and (B) of this section. All instances in an operating day constitute a single occurrence.

(A) The running average is above the maximum or below the minimum established limits; and

(B) The running average is based on at least six 1-hour average values.

(iii) The monitoring system is capable of detecting unchanging data during periods of operation, except in circumstances where the presence of unchanging data are the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. * * *

(2) * * *

(iii) The owner or operator shall retain the records specified in paragraph (h)(1) of this section, for the duration specified in paragraph (h) of this section. For any calendar week, if compliance with paragraphs (h)(1)(i) through (iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation.

(iv) For the purposes of paragraph (h) of this section, an excursion means that the daily average of monitoring data for a parameter is greater than the maximum, or less than the minimum established value.

■ 39. Table 1 to Subpart PPP of Part 63 is amended by:

■ a. Removing entries 63.1(a)(6)-(8) and 63.1(a)(9);

■ b. Adding entries 63.1(a)(6) and 63.1(a)(7)-(9);

■ c. Revising entries 63.1(c)(4), 63.6(e), 63.6(e)(1)(i), and 63.6(e)(1)(ii);

■ d. Adding entry 63.6(e)(3);

■ e. Removing entries 63.6(e)(3)(i), 63.6(e)(3)(i)(A), 63.6(e)(3)(i)(B), 63.6(e)(3)(i)(C), 63.6(e)(3)(ii), 63.6(e)(3)(iii), 63.6(e)(3)(iv), 63.6(e)(3)(v), 63.6(e)(3)(vi), 63.6(e)(3)(vii), 63.6(e)(3)(vii)(A), 63.6(e)(3)(vii)(B), 63.6(e)(3)(vii)(C), 63.6(e)(3)(viii), and 63.6(e)(3)(ix);

■ f. Revising entries 63.6(f)(1), 63.7(e)(1), 63.8(c)(1)(i), 63.8(c)(1)(ii), and 63.8(c)(1)(iii);

■ g. Adding entry 63.10(d)(5);

■ h. Removing entries 63.10(d)(5)(i) and 63.10(d)(5)(ii); and

■ i. Removing footnote (a).

The revisions and additions read as follows:

TABLE 1 OF SUBPART PPP OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART PPP AFFECTED SOURCES

Reference	Applies to subpart PPP	Explanation
63.1(a)(6)	Yes.	Reserved.
63.1(a)(7)-(9)	No	
63.1(c)(4)	No	Reserved.
63.6(e)	Yes	Except as otherwise specified for individual paragraphs. See § 63.1420(h)(4) for general duty requirement.
§ 63.6(e)(1)(i)	No	
§ 63.6(e)(1)(ii)	No	
§ 63.6(e)(3)	No	
§ 63.6(f)(1)	No	

TABLE 1 OF SUBPART PPP OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART PPP AFFECTED SOURCES—Continued

Reference	Applies to subpart PPP	Explanation
§ 63.7(e)(1)	No	See § 63.1437(a).
§ 63.8(c)(1)(i)	No.	
§ 63.8(c)(1)(ii)	No.	
§ 63.8(c)(1)(iii)	No.	
§ 63.10(d)(5)	No	See § 63.1439(b)(1)(ii) for malfunction reporting requirements.

■ 40. Table 2 to Subpart PPP of part 63 is amended by:
 ■ a. Revising the title;

■ b. Adding entries 63.107 and 63.153; and
 ■ c. Revising entry 63.160–63.182.

The revisions and additions read as follows:

TABLE 2 OF SUBPART PPP OF PART 63—APPLICABILITY OF HON PROVISIONS TO SUBPART PPP AFFECTED SOURCES

Reference	Applies to subpart PPP	Explanation	Applicable section of subpart PPP
Subpart F:			
63.107	No		
Subpart G:			
63.153	No		63.1421
Subpart H:			
63.160–63.182	Yes	Subpart PPP affected sources shall comply with all requirements of subpart H, with the differences noted in 63.1422(d), 63.1422(h), and 63.1434.	63.1434

■ 41. Table 7 to Subpart PPP of part 63 is amended by revising the title to read as follows:

Table 7 of Subpart PPP of Part 63—
 Operating Parameters for Which
 Monitoring Levels Are Required To

Be Established for Process Vent
 Streams

* * * * *
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40 CFR Parts 51, 60, 61, et al.

Revisions to Test Methods and Testing Regulations; Final Rule

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Parts 51, 60, 61, and 63**

[EPA-HQ-OAR-2010-0114; FRL-9906-23-OAR]

RIN 2060-AQ01

Revisions to Test Methods and Testing Regulations**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: This action promulgates technical and editorial corrections for source testing of emissions and operations. Some current testing provisions contain inaccuracies and outdated procedures, and new alternatives that have been approved are being added. These revisions will improve the quality of data and will give testers additional flexibility to use the newly approved alternative procedures.

DATES: This final rule is effective on February 27, 2014. The incorporation by reference materials listed in the rule are approved by the Director of the Federal Register as of February 27, 2014.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2010-0114. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, 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 at www.regulations.gov or in hard copy at the Air Docket, EPA/DC, William Jefferson Clinton (WJC) Building, Room 3334, 1301 Constitution Avenue NW., Washington, DC. The Docket Facility and the Public Reading Room are 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 Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Ms. Lula Melton, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division, Measurement Technology Group (E143-02), Research Triangle Park, North Carolina 27711; telephone number: (919) 541-2910; fax

number: (919) 541-0516; email address: melton.lula@epa.gov.

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I. General Information

A. Does this action apply to me?

The revisions promulgated in this final rule apply to testing at a number of source categories. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. Where can I obtain a copy of this action?

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

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 U.S. Court of Appeals for the District of Columbia Circuit by April 28, 2014. 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 established by this action may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce these requirements.

II. Background

The revisions to test methods and testing regulations were proposed in the **Federal Register** on January 9, 2012, with a public comment period that ended March 9, 2012. Thirty-eight comment letters were received from the public. Changes were made to this final rule based on the public comments.

III. Summary of Amendments

A. Appendix M of Part 51

In the introduction of Appendix M of part 51, Methods 3A and 19 are added to the list of methods not requiring the use of audit samples.

B. Method 201A of Appendix M of Part 51

Revisions are made to Method 201A as published on December 21, 2010. Typographical errors in references to acetone blanks, isokinetic sampling rate, source gas temperatures, stack blockage dimensions by the sampling heads, and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀) in Sections 7.2.1, 8.3.4(b), 8.3.4.1, 8.7.2.2, and 8.7.5.5(a), respectively, are corrected. An erroneous reference to Methods 4A and 5 in Section 10.1 when using a standard pitot tube is corrected to refer to Methods 1 and 2. Section 10.5, which addresses Class A volumetric glassware is deleted because it is not needed. For those filters that cannot be weighed to a constant weight in Section 11.2.1, instructions are added to flag and report the data as a minimum value. It is noted that the nozzle, front half, and in-stack filter samples need to be speciated into organic and inorganic fractions similar to the practice in Method 17. The method now notes that neither Method 17 nor 201A require a separate analysis of the filter for inorganic and organic particulate matter. Clarity is added for using Method 17 for quantifying condensable particulate matter. An incorrect term in Equation 9 of Section 12.5 is corrected. In the nomenclature in Section 12.1, V_b, the volume of aliquot taken for ion chromatography (IC) analysis, is deleted.

C. Method 202 of Appendix M of Part 51

Revisions are made to Method 202 as published on December 21, 2010. In Sections 7.2.1 and 7.2.2, an error in the units of the acetone blank is corrected. In Section 8.5.3.1, the text erroneously referring to empty impingers is deleted. Section 11.2.1 is clarified concerning the use of Method 17 for quantifying condensable particulate matter. Figures 2 and 3 are revised to correctly show the first impinger with an extended stem instead of a shortened one to be consistent with the method text, and the condensed moisture and sample portion of the sampling train are labeled to make it easy to identify. Figures 4, 5, and 6 are republished because of the poor print quality in the December 21, 2010, publication.

D. General Provisions (Subpart A) Part 60

In the General Provisions of part 60, Section 60.13(d)(1) is revised to remove the phrase "automatically, intrinsic to the opacity monitor." Methods 3A and 19 are added to the list of methods not requiring the use of audit samples in Section 60.8(g). A new Section 60.8(i) is added to allow the use of Method 205 of 40 CFR part 51, Appendix M, "Verification of Gas Dilution Systems for Field Instrument Calibrations," as an alternative provision whenever multiple calibration gases are required under part 60. The agency notes, however, that the use of calibration gas dilution devices continues to be disallowed for part 75 applications (see 40 CFR 75.22(a)(5)(i)). Section 60.17 is revised to arrange the consensus standards that are incorporated by reference in alpha-numeric order.

E. Industrial-Commercial-Institutional Steam Generating Units (Subpart Db) Part 60

In subpart Db, Method 320 is allowed as an alternative for determining nitrogen oxides (NO_x) concentration in Section 60.46b(f)(1)(ii), (h)(1) and (2), and sulfur dioxide (SO₂) concentration in Section 60.47b(b)(2).

F. Hospital/Medical/Infectious Waste Incinerators (Subpart Ec) Part 60

In subpart Ec, the definition of medical/infectious wastes in Section 60.51c is revised to correct the misspelling of "cremation."

G. Sulfuric Acid Plants (Subpart H) Part 60

In subpart H, an equation for calculating the SO₂ emission rate in Section 60.84(d) is corrected.

H. Sewage Treatment Plants (Subpart O) Part 60

In subpart O, a reference to Method 209F in Section 60.154(b)(5) is revised to reflect a newer available version of the method (i.e., 2540G).

I. Kraft Pulp Mills (Subpart BB) Part 60

In subpart BB, a typographical error is corrected in the equation for correcting the total reduced sulfur concentration to 10 percent oxygen.

J. Stationary Gas Turbines (Subpart GG) Part 60

In subpart GG, the definitions of terms for the equation in Section 60.335(b)(1) are revised to allow the reference combustor inlet absolute pressure to be measured in millimeters of mercury (mm Hg). The site barometric pressure is allowed as an alternative to the observed combustor inlet absolute pressure for calculating the mean NO_x emission concentration.

K. Lead-Acid Battery Manufacturing Plants (Subpart KK) Part 60

In subpart KK, Method 29 is allowed as an alternative to Method 12 in Section 60.374(b)(1) and (c)(2) for determining the lead concentration and flow rate of the effluent gas. An error in the equation for calculating the lead emission concentration in 60.374(b)(2) is corrected.

L. Metallic Mineral Processing Plants (Subpart LL) Part 60

In subpart LL, an error in the value of the particulate matter standard in Section 60.382(a)(1) is corrected from 0.02 g/dscm to 0.05 g/dscm. An alternative procedure, wherein a single visible emission observer can conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval, is allowed.

M. Asphalt Processing and Asphalt Roofing Manufacture (Subpart UU) Part 60

In subpart UU, an error in the value of the particulate matter standard for saturated felt or smooth-surfaced roll roofing is corrected from 0.04 kg/Mg to 0.4 kg/Mg.

N. Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (Subpart NNN) Part 60

In subpart NNN, references to paragraphs in Section 60.660(c)(4) and Section 60.665(h)(2) and (3) are corrected.

O. Stationary Compression Ignition Internal Combustion Engines (Subpart III) Part 60

In Subpart III, the requirement to use Method 1 or 1A for sampling point selection in testing gaseous emission from engines with smaller ducts is dropped, and single- or three-point sampling, depending on duct size, is added.

P. Stationary Spark Ignition Internal Combustion Engines (Subpart JJJJ) Part 60

In Subpart JJJJ, the requirement to use Method 1 or 1A for sampling point selection in testing gaseous emissions from engines with smaller ducts is dropped, and single- or three-point sampling, depending on duct size, is added.

Q. Method 1 of Appendix A-1 of Part 60

In Method 1, the distances from the sampling point to flow disturbances is clarified in Figure 1-1, and Figure 1-2 is corrected to show the proper demarcation between the requirement for 12 and 16 sampling points.

R. Method 2 of Appendix A-1 of Part 60

In Method 2, a pressure stability specification for the pitot tube leak-check is added. An erroneous reference to Figure 2-6B is corrected to reference Figure 2-7B. An error in a term in the denominator of Equation 2-7 is corrected. The velocity constant in English units used in Equation 2-7 is corrected by changing the units from m/sec to ft/sec. The term for absolute temperature in Equations 2-7 and 2-8 is corrected to represent the average of the absolute temperatures; an inadvertently omitted term is added to Section 12.1 for the average absolute temperature; and calibrating a barometer against a NIST-traceable barometer is allowed as an alternative to calibrating against a mercury barometer.

S. Method 2A of Appendix A-1 of Part 60

In Method 2A, calibrating a barometer against a NIST-traceable barometer is allowed as an alternative to calibrating against a mercury barometer.

T. Method 2B of Appendix A-1 of Part 60

In Method 2B, nomenclature errors are corrected and the assumed ambient carbon dioxide concentration used in the calculations is changed from 300 to 380 ppm to closer approximate current ambient levels.

U. Method 2D of Appendix A-1 of Part 60

In Method 2D, calibrating a barometer against a NIST-traceable barometer is allowed as an alternative to calibrating against a mercury barometer.

V. Method 3A of Appendix A-2 of Part 60

In Method 3A, a redundant sentence noting that pre-cleaned air may be used for the high-level calibration gas is deleted.

W. Method 3C of Appendix A-2 of Part 60

In Method 3C, an equation for correcting the sample nitrogen concentration for tank dilution is added as a supplemental calculation option for Method 25C samples.

X. Method 4 of Appendix A-3 of Part 60

In Method 4, the English value for the leak rate exceedance in Section 9.1 is corrected from 0.20 cfm to 0.020 cfm. Method 6A, Method 320, and a calculation using F-factors are added as alternatives to Method 4 for the moisture determination.

Y. Method 5 of Appendix A-3 of Part 60

In Method 5, it is clarified that the deionized water used in the analysis of material caught in the impingers must have ≤0.001 percent residue; the factor K is corrected to read K' in Equation 5-13; calibrating a barometer against a NIST-traceable barometer is allowed as an alternative to calibrating against a mercury barometer; calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer is allowed as an alternative to calibrating against a mercury-in-glass thermometer; rechecking temperature sensors for the filter holder and metering system after each test is allowed in place of having sensors calibrated within 3 °F; the option to check the probe heater calibration after a test at a single point using a reference thermometer is added; the use of weather station barometric pressure corrected to testing point elevation is added as an option to having an on-site barometer; a single acetone blank per container is allowed in place of a blank from each wash bottle; Section 10.3.3 is clarified as a post-test metering system calibration check rather than a metering system calibration, and an alternative metering check procedure is added; the use of filter holder supports or frits made of Teflon is allowed without having to first obtain the Administrator's approval; and Reference 13 for post-test calibration is added to the method.

Z. Method 5A of Appendix A-3 of Part 60

In Method 5A, mercury-free thermometers are allowed as an alternative to mercury-in-glass thermometers.

AA. Method 5E of Appendix A-3 of Part 60

In Method 5E, the requirement to use the Rosemount Model 2100A total organic content analyzer is replaced with the Tekmar-Dohrmann or equivalent analyzer. In Section 12.5, the equation for total particulate concentration is correctly labeled as Eq. 5E-5.

BB. Method 5H of Appendix A-3 of Part 60

In Method 5H, Section 12.1 is revised to add missing terms C_i , C_o , Q_i , and Q_o ; and procedures for the determination of an alternative tracer gas flow rate are added.

CC. Method 6 of Appendix A-4 of Part 60

In Method 6, calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer is allowed as an alternative to using a mercury-in-glass thermometer, and calibrating a barometer against a NIST-traceable barometer is allowed as an alternative to calibrating against a mercury barometer.

DD. Method 6C of Appendix A-4 of Part 60

In Section 4.0 of Method 6C, an incorrect reference to Section 4.1 of Method 6 is corrected to reference Section 4.0 of Method 7E. Provisions that were removed from the original method that addressed potential quenching effects in fluorescence analyzers are added to the method.

EE. Method 7 of Appendix A-4 of Part 60

In Method 7, procedures are added to avoid biasing the results when sampling under conditions of high SO_2 concentrations; calibrating a barometer against a NIST-traceable barometer is added as an alternative to calibrating against a mercury barometer; and calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer is an acceptable alternative to using a mercury-in-glass thermometer.

FF. Method 7A of Appendix A-4 of Part 60

In Method 7A, new procedures are added to avoid biasing the results when sampling under conditions of high SO_2

concentrations, and calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer is added as an acceptable alternative to using a mercury-in-glass thermometer.

GG. Method 7E of Appendix A-4 of Part 60

In Method 7E, the instructions for choosing the high-level calibration gas are clarified. Instructions are added to minimize contact of the sample with any condensate to reduce the chance of sample loss, and an error in the traverse point locations used to determine stratification across large stacks is corrected. The basis of a stable response for measurements in the system response time determination is revised in Section 8.2.5 to conform with Section 8.2.6. Alternative sampling bags made of materials other than Tedlar are allowed if the materials are applicable for retaining the compounds of interest.

HH. Method 8 of Appendix A-4 of Part 60

In Method 8, an error in the definition of V_{soln} is corrected. Figure 8-1 is clarified to identify which impingers collect sulfuric acid/sulfur trioxide and which collect SO_2 .

II. Method 10 of Appendix A-4 of Part 60

Method 10 is revised to allow the use of sample tanks as an alternative to flexible bags for sample collection.

JJ. Methods 10A and 10B of Appendix A-4 of Part 60

In Methods 10A and 10B, sampling bags made of materials other than Tedlar are allowed if the materials have the sample retaining qualities of Tedlar.

KK. Method 11 of Appendix A-5 of Part 60

Method 11 is revised to address sample breakthrough at high concentrations by using an additional collection impinger. Calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer is an acceptable alternative to using a mercury-in-glass thermometer.

LL. Method 12 of Appendix A-5 of Part 60

Method 12 is revised to allow for analysis by inductively coupled plasma-atomic emission spectrometry (ICP-AES) and cold vapor atomic fluorescence spectrometry (CVAFS) as alternatives to atomic absorption (AA) analysis.

MM. Method 14A of Appendix A-5 of Part 60

In Section 10.1.1 of Method 14A, an incorrect reference to Figure 5-6 is corrected to reference Figure 5-5.

NN. Method 16A of Appendix A-6 of Part 60

In Method 16A, the applicability section notes that method results may be biased low if used at sources other than kraft pulp mills where stack oxygen levels may be lower.

OO. Method 16C of Appendix A-6 of Part 60

In Method 16C, errors in the nomenclature and the equation for calculating the total reduced sulfur concentration are corrected.

PP. Method 18 of Appendix A-6 of Part 60

In Method 18, sampling bags made of materials other than Tedlar are allowed if the materials are applicable for retaining the compounds of interest.

QQ. Method 23 of Appendix A-7 of Part 60

In Method 23, the requirement in Section 2.2.7 that silica gel be stored in metal containers has been deleted. Section 4.2.7 is clarified to note that the used silica gel should be transferred to its original container or other suitable vessel if moisture is being determined or discarded if not needed. Mercury-free thermometers are allowed as alternatives to mercury-in-glass thermometers. Section 8.0, which was inadvertently removed in a previous rulemaking, has been added.

RR. Method 24 of Appendix A-7 of Part 60

In Method 24, ASTM Method D2369 is cited without referencing specific sections to preclude confusion if the method sections are revised in the future.

SS. Method 25 of Appendix A-7 of Part 60

In Method 25, more detailed information is given to describe the filters used for sample collection.

TT. Method 25C of Appendix A-7 of Part 60

Method 25C is revised to allow sampling lines made of Teflon. Probes that have closed points and are driven below the surface in a single step and withdrawn a distance to create a gas gap are allowed as acceptable substitutes to pilot probes and the auger procedure.

UU. Method 25D of Appendix A-7 of Part 60

In Method 25D, errors in cross-references within the method are corrected.

VV. Method 26 of Appendix A-8 of Part 60

Method 26 is revised to allow the use of heated Teflon probes in place of glass-lined probes. Conflicting temperature requirements for the sampling system are clarified, and the note to keep the probe and filter temperature at least 20 °C above the source temperature is removed. The location of the thermocouple that monitors the collected gas temperature is clarified as being as close to the filter holder as practicable instead of in the gas stream. Method 26A is allowed as an acceptable alternative when Method 26 is required.

WW. Method 26A of Appendix A-8 of Part 60

Method 26A is revised to clearly state that the temperature of the probe and filter must be maintained between 120 and 134 °C.

XX. Method 29 of Appendix A-8 of Part 60

Method 29 is revised to allow sample analysis by CVAFS as an alternative to AA analysis.

YY. Method 30B of Appendix A-8 of Part 60

In Method 30B, calibrating a barometer against a NIST-traceable barometer is allowed as an alternative to calibrating against a mercury barometer. Table 9-1 and the method text are revised to amend the quality assurance/quality control criteria for sorbent trap section 2 breakthrough and sample analysis to address compliance testing and relative accuracy testing of mercury monitoring systems currently being conducted at much lower emission concentrations. The method is revised to include the most up-to-date citation for determining the method detection limit.

ZZ. Performance Specification 3 of Appendix B of Part 60

In Performance Specification 3, a statement that was inadvertently removed that allows the relative accuracy to be within 20 percent of the reference method mean value is added to establish the original intent of the rule.

AAA. Performance Specification 4 of Appendix B of Part 60

Performance Specification 4 is revised to remove the interference trap specified in Method 10 when evaluating non-dispersive infrared continuous emission monitoring systems against Method 10.

BBB. Performance Specification 4B of Appendix B of Part 60

Performance Specification 4B is clarified to note that Equation 1 in Section 7.1.1 for calculating calibration error only applies to the carbon monoxide monitor and not the oxygen monitor. It is noted for the oxygen monitor that the calibration error should be expressed as the oxygen concentration difference between the mean monitor and reference value at three levels.

CCC. Performance Specification 7 of Appendix B of Part 60

Performance Specification 7 is revised to allow Methods 15 and 16 as reference methods in addition to Method 11.

DDD. Performance Specification 11 of Appendix B of Part 60

In Performance Specification 11, errors in the denominators of Equations 11-1 and 11-2 are corrected.

EEE. Performance Specification 12B of Appendix B of Part 60

In Performance Specification 12B, allowance is made for using a single good trap when one is lost, broken or damaged. More flexibility is also allowed in meeting the stack flow-to-sample flow ratio.

FFF. Performance Specification 15 of Appendix B of Part 60

In Performance Specification 15, the general references to 40 CFR part 60, Appendix B, for the relative accuracy analysis procedure are revised to specifically cite Performance Specification 2 of 40 CFR part 60, Appendix B.

GGG. Performance Specification 16 of Appendix B of Part 60

Performance Specification 16 is revised to clarify the retesting of a predictive emission monitoring system (PEMS) after a sensor is replaced. Relative accuracy testing at three load or production rate levels is allowed in cases where the key operating parameter is not readily alterable. Additional instruction is added for performing the relative accuracy audit (RAA). An error in the RAA acceptance criterion is corrected, and an alternative acceptance criterion for low concentration measurements is added. The yearly

relative accuracy test audit clearly notes that the statistical tests in Section 8.3 are not required for this test. An incorrect reference to Equation 16-4 in Section 12.4 is corrected.

HHH. Procedure 1 of Appendix F of Part 60

In Procedure 1, the relevant performance specification would be cited for the RAA calculation instead of using the current Equation 1-1, which is not appropriate for all pollutants.

III. Procedure 2 of Appendix F of Part 60

In Procedure 2, Equations 2-2 and 2-3 are revised to have the full-scale value in the denominator, which is more appropriate than the up-scale check value. The denominator of equation 2-4 is revised to include the volume of the reference device rather than the full-scale value.

JJJ. Procedure 5 of Appendix F of Part 60

In Procedure 5, the second section listed as Section 6.2.6 is correctly numbered as Section 6.2.7.

KKK. General Provisions (Subpart A) Part 61

In the General Provisions of part 61, Methods 3A and 19 are added to the list of methods not requiring the use of audit samples in Section 61.13(e).

LLL. Beryllium (Subpart C) Part 61

In the Beryllium National Emission Standards for Hazardous Air Pollutants (NESHAP), Method 29 of part 60 is added as an acceptable alternative to Method 104 in Section 61.33(a) for emissions testing.

MMM. Beryllium Rocket Motor Firing (Subpart D) Part 61

In the beryllium rocket motor firing NESHAP, a conversion error in the emission standard in Section 61.42(a) is corrected.

NNN. Mercury (Subpart E) Part 61

In the mercury NESHAP, Method 29 of part 60 is added as an acceptable alternative to Method 101A in Section 61.53(d)(2) for emissions testing.

OOO. Inorganic Arsenic Emissions From Glass Manufacturing Plants (Subpart N) Part 61

In the glass manufacturing plants NESHAP, Method 29 in Appendix A of part 60 is added as an acceptable alternative to Method 108 in Section 61.164(d)(2)(i) for determining the arsenic emissions rate and in Section 61.164(e)(1)(i) and (e)(2) for determining

the arsenic concentration in a gas stream.

PPP. Method 101 of Appendix B of Part 61

Method 101 is revised to allow analysis by ICP–AES or CVAFS as alternatives to AA analysis.

QQQ. Method 101A of Appendix B of Part 61

Method 101A is revised to allow analysis by ICP–AES or CVAFS as alternatives to AA analysis.

RRR. Method 102 of Appendix B of Part 61

In Method 102, mercury-free thermometers are allowed in place of mercury-in-glass thermometers.

SSS. Method 104 of Appendix B of Part 61

Method 104 is revised to allow analysis by ICP–AES and CVAFS as alternatives to AA analysis. A new alternative procedures section is added to address ICP–AES.

TTT. Methods 108 and 108A of Appendix B of Part 61

Methods 108 and 108A are revised to allow analysis by ICP–AES as an alternative to AA analysis. A new alternative procedures section is added to address ICP–AES.

UUU. General Provisions (Subpart A) Part 63

In the General Provisions of part 63, Methods 3A and 19 are added to the list of methods not requiring the use of audit samples in Section 63.7(c). In Section 63.8(f)(6)(iii), an incorrect reference to a section of Performance Specification 2 is corrected. Section 63.14 is revised to arrange the materials that are incorporated by reference in alpha-numeric order.

VVV. Synthetic Organic Chemical Manufacturing Industry (Subpart G) Part 63

Subpart G is revised to allow the use of Method 316 or Method 8260B in the SW–846 Compendium of Methods to determine hazardous air pollutant concentrations in wastewater streams in Section 63.144(b)(5)(i).

WWW. Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Subpart N) Part 63

South Coast Air Quality Management District Method 205.1 is added as a testing option for measuring total chromium.

XXX. Ethylene Oxide Emissions Standards for Sterilization Facilities (Subpart O) Part 63

The ethylene oxide emissions standard for sterilization facilities is revised to allow California Air Resources Board (CARB) Method 431 as an alternative to the procedures in Section 63.365(b) for determining the efficiency at the sterilization chamber vent. An error in a reference to a section in Performance Specification 8 is also corrected.

YYY. Marine Tank Vessel Loading Operations (Subpart Y) Part 63

The marine tank vessel loading operations emissions standard is revised to allow Method 25B as an alternative to Method 25A in Section 63.565(d)(5) for determining the average VOC concentration upstream and downstream of recovery devices. Method 25B is allowed as an alternative to Methods 25 and 25A for determining the percent reduction in VOC in Section 63.565(d)(8), and the requirement that Method 25B be validated according to Method 301 in Section 63.565(d)(10) is added. Method 25B is also added as an alternative to Method 25A in determining the baseline outlet VOC concentration in Section 63.565(g).

ZZZ. Aerospace Manufacturing and Rework Facilities (Subpart GG) Part 63

The aerospace manufacturing and rework facilities emissions standard is revised to remove an incorrect reference to the location of Method 319 in Section 63.750(o).

AAAA. Pharmaceuticals Production (Subpart GGG) Part 63

The pharmaceuticals production emissions standard is revised to allow Method 320 as an alternative to Method 18 for demonstrating that a vent is not a process vent.

BBBB. Secondary Aluminum Production (Subpart RRR) Part 63

The secondary aluminum production emissions standard is revised to allow Method 26 as an alternative to Method 26A in Section 63.1511(c)(9) for determining hydrochloric acid (HCl) concentration.

CCCC. Manufacturing of Nutritional Yeast (Subpart CCCC) Part 63

Table 2 in the manufacturing of nutritional yeast emissions standard is revised to delete the requirement to use Methods 1, 2, 3, and 4 when measuring VOC by Method 25A.

DDDD. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (Subpart UUUU) Part 63

Table 4 in the petroleum refineries emissions standard is revised to allow Method 320 as an alternative to Method 18 for determining control device efficiency for organic compounds.

EEEE. Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ) Part 63

Table 4 in the stationary reciprocating internal combustion engines emissions standard is revised to clarify that a heated probe is not necessary when using ASTM D6522 to measure oxygen or carbon dioxide concentrations. The requirement to use Method 1 or 1A for sampling site and sampling point selection in testing gaseous emissions from engines with smaller ducts is deleted, and single- or three-point sampling, depending on duct size, is added.

FFFF. Method 306 of Appendix A of Part 63

Method 306 is revised to remove references to two figures that do not exist and to clarify the conditions under which ICP is appropriate for sample analysis. Alternative mercury-free thermometers are allowed as alternatives to mercury-in-glass thermometers.

GGGG. Method 306A of Appendix A of Part 63

In Method 306A, information is added to clarify the conditions under which sample filtering is required.

HHHH. Methods 308, 315, and 316 of Appendix A of Part 63

In Methods 308, 315, and 316, calibrating a temperature sensor against a thermometer equivalent to a mercury-in-glass thermometer is added as an alternative to mercury-in-glass thermometers. Alternative mercury-free thermometers are allowed as alternatives to mercury-in-glass thermometers.

IIII. Method 321 of Appendix A of Part 63

In Method 321, the term for dilution factor in the calculations is clarified.

IV. Public Comments on the Proposed Amendments

Thirty-eight comment letters were received on the proposed rule. The public comments and the agency's responses are summarized in the Summary of Comments and Responses Document that has been added to the

docket that is accessible at the address given in the ADDRESSES section of this preamble.

V. 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” under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is, therefore, not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011). It does not involve the expenditure of \$100 million in a year and does not raise significant issues. This final rule amends current testing regulations by removing errors and obsolete provisions and adding approved alternative procedures.

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* Burden is defined at 5 CFR 1320.3(b). This final rule does not add information collection requirements beyond those currently required under the applicable regulations. This final rule amends current testing regulations by removing errors and obsolete provisions and adding approved alternative procedures.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration’s (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this final rule on small

entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This final rule will not impose any requirements on small entities since it only corrects and updates current requirements and adds new testing options.

D. Unfunded Mandates Reform Act

This action contains no federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538, for state, local, or tribal governments or the private sector. This action imposes no enforceable duty on any state, local or tribal governments or the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA. This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. The alternative procedure being added will give small entities more flexibility in choosing testing procedures in applicable situations.

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, as specified in Executive Order 13132. This final rule corrects and updates current testing requirements. Thus, Executive Order 13132 does not apply to this action.

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This final rule corrects and updates testing provisions that are already currently mandated. It does not add any new requirements and does not affect pollutant emissions or air quality. 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 EO 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to

EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

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

This rule is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable voluntary consensus standards. This action does not involve technical standards. Therefore, the EPA did not consider the use of any voluntary consensus standards.

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

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision 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 and low-income populations in the United States.

The EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This final rule does not relax the control measures on sources regulated by the rule and,

therefore, will not cause emissions increases from these sources.

K. Congressional Review Act

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 rule 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). This rule will be effective on February 27, 2014.

List of Subjects

40 CFR Parts 51 and 61

Air pollution control, Environmental protection, Performance specifications, and Test methods and procedures.

40 CFR Parts 60 and 63

Air pollution control, Environmental protection, Incorporation by reference, Performance specifications, and Test methods and procedures.

Dated: January 28, 2014.

Gina McCarthy,
Administrator.

For the reasons set out in the preamble, Title 40, Chapter I of the Code of Federal Regulations is amended 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: 42 U.S.C. 7401, *et seq.*

- 2. Amend appendix M to part 51 as follows:

- a. By revising section 4.0.a.
- b. By amending Method 201A as follows:
 - i. By revising section 7.2.1.
 - ii. By revising paragraph 8.3.4(b).
 - iii. By revising section 8.3.4.1.
 - iv. By revising section 8.7.2.2.
 - v. By revising paragraph 8.7.5.5(a).
 - vi. By revising the introductory text of section 10.1.
 - vii. By removing section 10.5.

- viii. By revising section 11.2.1.
- ix. By removing the term "Vb" and its definition from section 12.1.
- x. By revising Equations 8 and 9 in section 12.5.
- c. By amending Method 202 as follows:
 - i. By revising sections 7.2.1 and 7.2.2.
 - ii. By revising section 8.5.1.
 - iii. By revising section 8.5.3.1.
 - iv. By revising sections 11.2.1 and 11.2.2.
 - vi. By revising Figures 2, 3, 4, 5, and 6 in section 18.0.

Appendix M to Part 51—Recommended Test Methods for State Implementation Plans

* * * * *

4.0. * * *

a. The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60, Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60, Methods 18 and 19 of appendix A-6 of part 60, Methods 20, 22, and 25A of appendix A-7 of part 60, and Methods 303, 318, 320, and 321 of appendix A of part 63 of this chapter. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, <http://www.epa.gov/ttn/emc>, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the

compliance authority first and report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field, and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request and the compliance authority may grant a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

Method 201A—Determination of PM₁₀ and PM_{2.5} Emissions From Stationary Sources (Constant Sampling Rate Procedure)

* * * * *

7.2.1 Acetone. Use acetone that is stored in a glass bottle. Do not use acetone from a metal container because it will likely produce a high residue in the laboratory and field reagent blanks. You must use acetone with blank values less than 1 part per million by weight residue. Analyze acetone blanks prior to field use to confirm low blank values. In no case shall a blank value of greater than 0.0001 percent (1 part per million by weight) of the weight of acetone used in sample recovery be subtracted from the sample weight (*i.e.*, the maximum blank correction is 0.1 mg per 100 g of acetone used to recover samples).

* * * * *

8.3.4 * * *

(b) The appropriate nozzle to maintain the required gas sampling rate for the velocity pressure range and isokinetic range. If the isokinetic range cannot be met (*e.g.*, batch processes, extreme process flow or temperature variation), void the sample or use methods subject to the approval of the Administrator to correct the data. The acceptable variation from isokinetic sampling is 80 to 120 percent and no more than 100 ± 21 percent (2 out of 12 or 5 out of 24) sampling points outside of this criteria.

* * * * *

8.3.4.1 Preliminary traverse. You must use an S-type pitot tube with a conventional thermocouple to conduct the traverse. Conduct the preliminary traverse as close as possible to the anticipated testing time on sources that are subject to hour-by-hour gas flow rate variations of approximately ± 20 percent and/or gas temperature variations of approximately ± 28 °C (± 50 °F). (Note: You should be aware that these variations can cause errors in the cyclone cut diameters and the isokinetic sampling velocities.)

* * * * *

8.7.2.2 Probe blockage factor. You must use Equation 26 to calculate an average probe blockage correction factor (*b_p*) if the diameter

of your stack or duct is between 25.7 and 36.4 inches for the combined PM_{2.5}/PM₁₀ sampling head and pitot and between 18.8 and 26.5 inches for the PM_{2.5} cyclone and pitot. A probe blockage factor is calculated because of the flow blockage caused by the relatively large cross-sectional area of the cyclone sampling head, as discussed in Section 8.3.2.2 and illustrated in Figures 8 and 9 of Section 17. You must determine the cross-sectional area of the cyclone head you use and determine its stack blockage factor. (Note: Commercially-available sampling heads (including the PM₁₀ cyclone, PM_{2.5} cyclone, pitot and filter holder) have a projected area of approximately 31.2 square inches when oriented into the gas stream.) As the probe is moved from the outermost to the innermost point, the amount of blockage that actually occurs ranges from approximately 13 square inches to the full 31.2 square inches plus the blockage caused by the probe extension. The average cross-sectional area blocked is 22 square inches.

* * * * *

8.7.5.5 * * *

(a) Container #1, Less than or equal to PM_{2.5} micrometer filterable particulate. Use tweezers and/or clean disposable surgical gloves to remove the filter from the filter holder. Place the filter in the Petri dish that you labeled with the test identification and Container #1. Using a dry brush and/or a sharp-edged blade, carefully transfer any PM and/or filter fibers that adhere to the filter holder gasket or filter support screen to the Petri dish. Seal the container. This container holds particles less than or equal to 2.5 micrometers that are caught on the in-stack filter. (Note: If the test is conducted for PM₁₀ only, then Container #1 would be for less than or equal to PM₁₀ micrometer filterable particulate.)

* * * * *

10.1 Gas Flow Velocities. You must use an S-type pitot tube that meets the required EPA specifications (EPA Publication 600/4-77-0217b) during these velocity measurements. (Note: If, as specified in Section 8.7.2.3, testing is performed in stacks

less than 26.5 inches in diameter, testers may use a standard pitot tube according to the requirements in Method 1 or 2 of appendix A-3 to part 60 of this chapter.) You must also complete the following:

* * * * *

11.2.1 Container #1, Less than or Equal to PM_{2.5} Micrometer Filterable Particulate. Transfer the filter and any loose particulate from the sample container to a tared weighing dish or pan that is inert to solvent or mineral acids. Desiccate for 24 hours in a dessicator containing anhydrous calcium sulfate. Weigh to a constant weight and report the results to the nearest 0.1 mg. (See Section 3.0 for a definition of Constant weight.) If constant weight requirements cannot be met, the filter must be treated as described in Section 11.2.1 of Method 202 of appendix M to this part. Note: The nozzle and front half wash and filter collected at or below 30 °C (85 °F) may not be heated and must be maintained at or below 30 °C (85 °F).

* * * * *

12.5 * * *

For N_{re} Less than 3,162:

$$Q_{IV} = 0.0060639 \left[\frac{\mu}{C^{0.4242}} \right] \left[\frac{P_s M_w}{T_s} \right]^{-0.5759} \left[\frac{1}{D_{50}} \right]^{0.8481} \quad (\text{Eq. 8})$$

For N_{re} greater than or equal to 3,162:

$$Q_{IV} = 0.07657 \left[\frac{\mu}{C^{0.6205}} \right] \left[\frac{P_s M_w}{T_s} \right]^{-0.3795} \left[\frac{1}{D_{50}} \right]^{1.241} \quad (\text{Eq. 9})$$

Method 202—Dry Impinger Method for Determining Condensable Particulate Emissions From Stationary Sources

* * * * *

7.2.1 Acetone. Use acetone that is stored in a glass bottle. Do not use acetone from a metal container because it normally produces a high residual mass in the laboratory and field reagent blanks. You must use acetone that has a blank value less than 1.0 ppmw (0.1 mg/100 g) residue.

7.2.2 Hexane, American Chemical Society grade. You must use hexane that has a blank residual mass value less than 1.0 ppmw (0.1 mg/100 g) residue.

* * * * *

8.5.1 Impinger and CPM Filter Assembly.

8.5.1.1 Monitor the moisture condensation in the knockout and backup impingers. If the accumulated water from moisture condensation overwhelms the knockout impinger, i.e., the water level is more than approximately one-half the capacity of the knockout impinger, or if water accumulates in the backup impinger sufficient to cover the impinger insert tip, then you may interrupt the sampling run, recover and weigh the moisture accumulated

in the knockout and backup impinger, reassemble and leak check the sampling train, and resume the sampling run. You must purge the water collected during the test interruption as soon as practical following the procedures in Section 8.5.3.

8.5.1.2 You must include the weight or volume of the moisture in your moisture calculation and you must combine the recovered water with the appropriate sample fraction for subsequent CPM analysis.

8.5.1.3 Use the field data sheet for the filterable particulate method to record the CPM filter temperature readings at the beginning of each sample time increment and when sampling is halted. Maintain the CPM filter greater than 20 °C (greater than 65 °F) but less than or equal to 30 °C (less than or equal to 85 °F) during sample collection. (Note: Maintain the temperature of the CPM filter assembly as close to 30 °C (85 °F) as feasible.)

* * * * *

8.5.3.1 If you choose to conduct a pressurized nitrogen purge at the completion of CPM sample collection, you may purge the entire CPM sample collection train from the condenser inlet to the CPM filter holder outlet or you may quantitatively transfer the water collected in the condenser and the

water dropout impinger to the backup impinger and purge only the backup impinger and the CPM filter. You must measure the water in the knockout and backup impingers and record the volume or weight as part of the moisture collected during sampling as specified in Section 8.5.3.4.

8.5.3.1.1 If you choose to conduct a purge of the entire CPM sampling train, you must replace the short stem impinger insert in the knock out impinger with a standard modified Greenburg Smith impinger insert.

8.5.3.1.2 If you choose to combine the knockout and backup impinger catch prior to purge, you must purge the backup impinger and CPM filter holder.

8.5.3.1.3 If the tip of the impinger insert does not extend below the water level (including the water transferred from the first impinger if this option was chosen), you must add a measured amount of degassed, deionized ultra-filtered water that contains 1 ppmw (1 mg/L) residual mass or less until the impinger tip is at least 1 centimeter below the surface of the water. You must record the amount of water added to the water dropout impinger (V_p) (see Figure 4 of Section 18) to correct the moisture content of the effluent gas. (Note: Prior to use, water

must be degassed using a nitrogen purge bubbled through the water for at least 15 minutes to remove dissolved oxygen).

8.5.3.1.4 To perform the nitrogen purge using positive pressure nitrogen flow, you must start with no flow of gas through the clean purge line and fittings. Connect the filter outlet to the input of the impinger train and disconnect the vacuum line from the exit of the silica moisture collection impinger (see Figure 3 of Section 18). You may purge only the CPM train by disconnecting the moisture train components if you measure moisture in the field prior to the nitrogen purge. You must increase the nitrogen flow gradually to avoid over-pressurizing the impinger array. You must purge the CPM train at a minimum of 14 liters per minute for at least one hour. At the conclusion of the purge, turn off the nitrogen delivery system.

* * * * *

11.2.1 Container #3, CPM Filter Sample. If the sample was collected by Method 17 or Method 201A with a stack temperature below 30 °C (85 °F), transfer the filter and any loose PM from the sample container to a tared glass weighing dish. (See Section 3.0 for a definition of constant weight.) Desiccate the sample for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh to a constant weight and report the results to the nearest 0.1 mg. [Note: In-stack filter samples collected at 30 °C (85 °F) may include both filterable insoluble particulate and condensable particulate. The nozzle and front half wash and filter collected at or below 30 °C (85 °F) may not be heated and must be maintained at or below 30 °C (85 °F).]

11.2.2 CPM Container #1, Aqueous Liquid Impinger Contents. Analyze the water soluble CPM in Container #1 as described in

this section. Place the contents of Container #1 into a separatory funnel. Add approximately 30 ml of hexane to the funnel, mix well, and pour off the upper organic phase. Repeat this procedure twice with 30 ml of hexane each time combining the organic phase from each extraction. Each time, leave a small amount of the organic/hexane phase in the separatory funnel, ensuring that no water is collected in the organic phase. This extraction should yield about 90 ml of organic extract. Combine the organic extract from Container #1 with the organic train rinse in Container #2.

* * * * *

18.0 * * *

BILLING CODE 6560-N-P

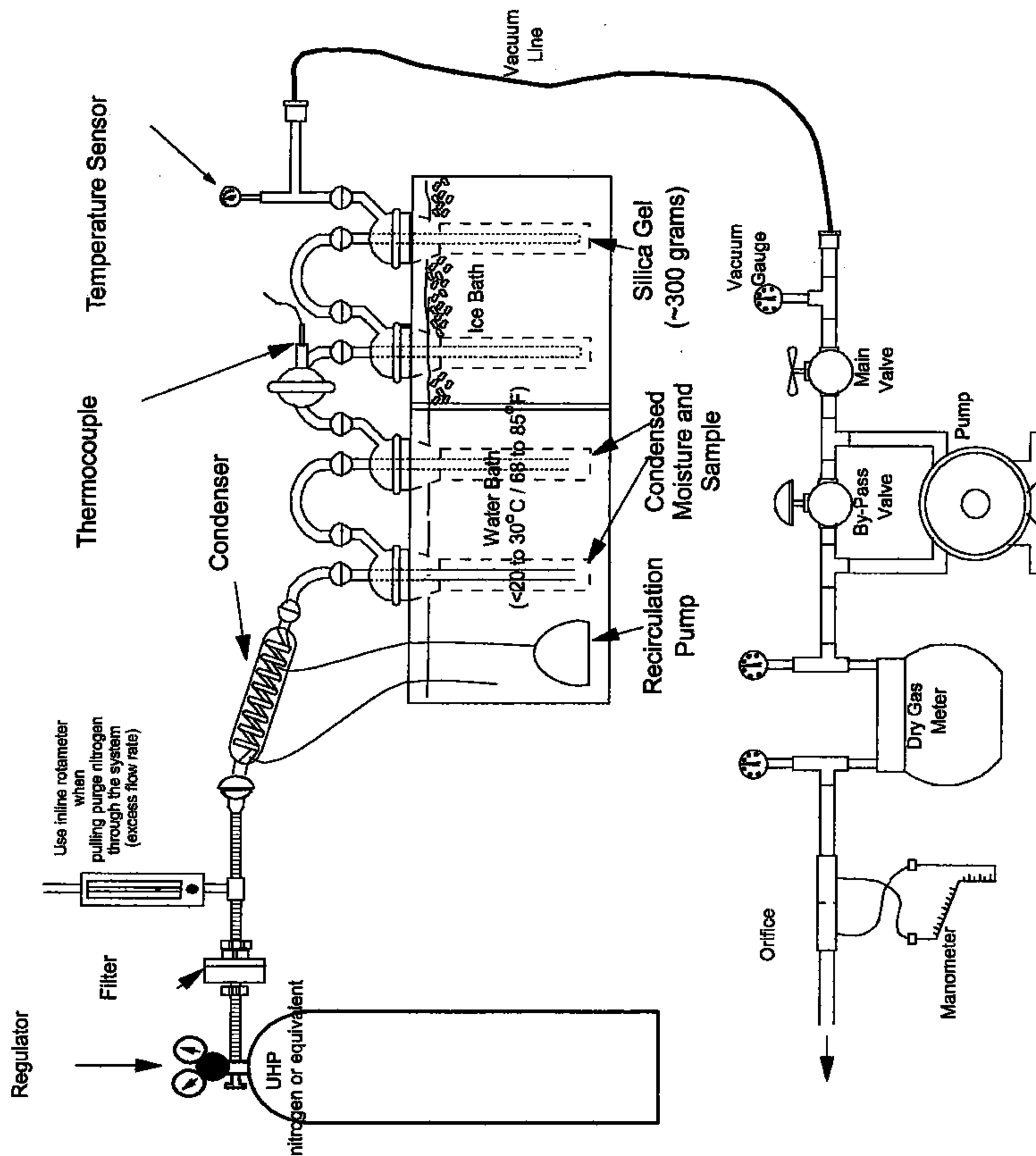


Figure 2. Nitrogen Purge Train Configuration (Vacuum Purge)

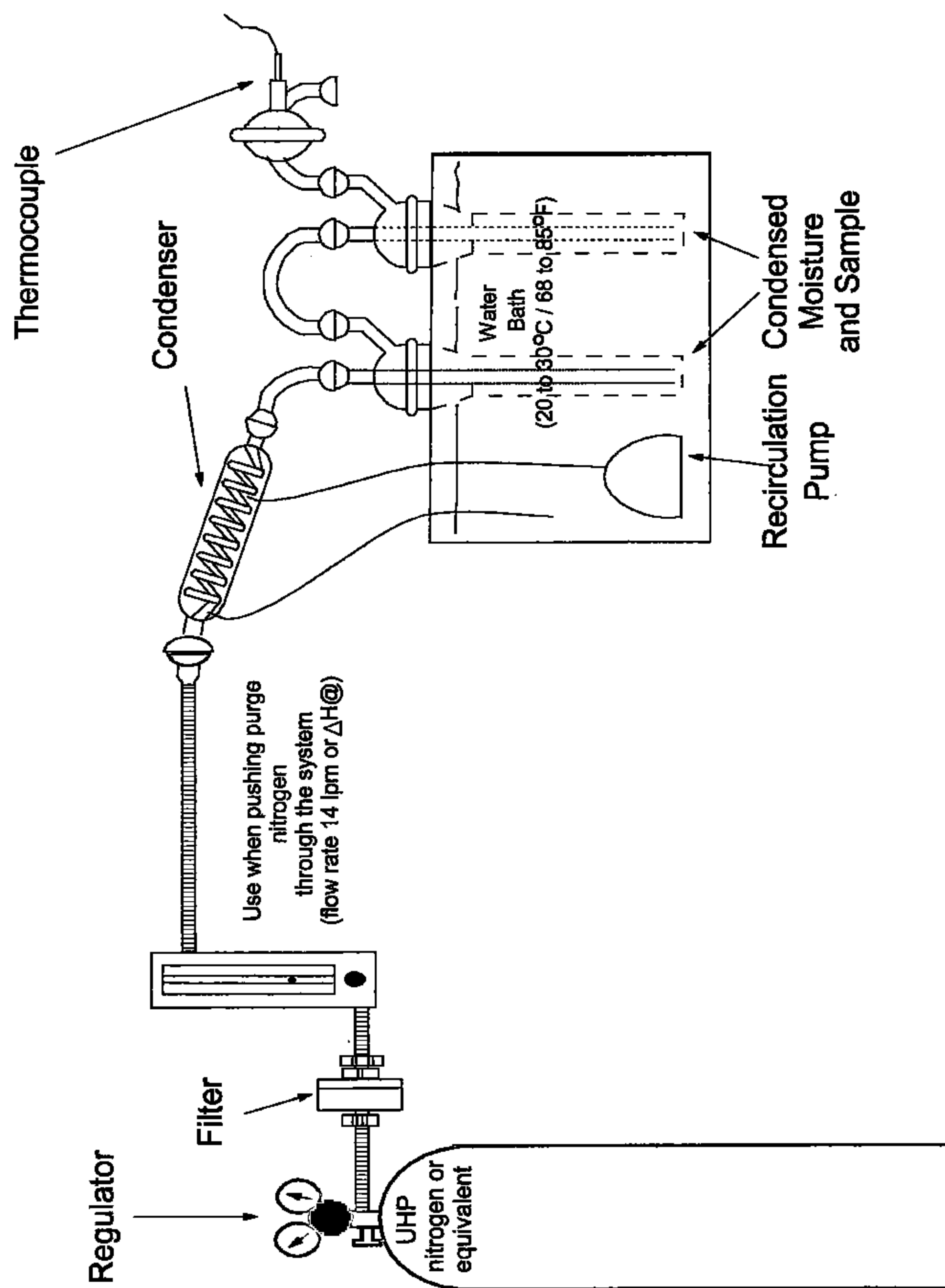


Figure 3. Nitrogen Purge Train Configuration (Pressure Purge)

Field Train Recovery Blank Condensable Particulate Calculations	
Plant	
Date	
Blank No.	
CPM Filter No.	
Water volume added to purge train (V_p)	ml
Field Reagent Blank Mass ^a	
Water (Section 11.2.7)	mg
Acetone (Section 11.2.6)	mg
Hexane (Section 11.2.8)	mg
Field Train Recovery Blank Mass	
Mass of Organic CPM (m_{ob}) (Section 11.2.3)	mg
Mass of Inorganic CPM (m_{ib}) (Equation 3)	mg
Mass of the Field Train Recovery Blank (not to exceed 2.0 mg) (Equation 2)	mg

^aField reagent blanks are optional and intended to provide the testing contractor with information they can use to implement corrective actions, if necessary, to reduce the residual mass contribution from reagents used in the field. Field reagent blanks are not used to correct the CPM measurement results.

Figure 4. Field Train Recovery Blank Condensable Particulate Calculations

Other Field Train Sample Condensable Particulate Data	
Plant	
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train (max 50 ml) (V_p)	ml
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train (max 50 ml) (V_p)	ml
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train (max 50 ml) (V_p)	ml

Figure 5. Other Field Train Sample Condensable Particulate Data

Calculations for Recovery of Condensable PM (CPM)	
Plant	_____
Date	_____
Run No.	_____
Sample Preparation - CPM Containers No. 1 and 2 (Section 11.1)	
Was significant volume of water lost during transport? Yes or No	_____
If Yes, measure the volume received.	_____
Estimate the volume lost during transport.	_____ ml
Was significant volume of organic rinse lost during transport? Yes or No	_____
If Yes, measure the volume received.	_____
Estimate the volume lost during transport.	_____ ml
For Titration	
Normality of NH_4OH (N)	_____ N
(Section 10.2)	
Volume of titrant (V_t)	_____ ml
(Section 11.2.2.2)	
Mass of NH_4 added (m_a)	_____ mg
(Equation 1)	
For CPM Blank Weights	
Inorganic Field Train Recovery Blank Mass (m_{ib}) (Section 9.9)	_____ mg
Organic Field Train Recovery Blank Mass (m_{ob}) (Section 9.9)	_____ mg
Mass of Field Train Recovery Blank (M_{fb}) (max. 2 mg) (Equation 2)	_____ mg
For CPM Train Weights	
Mass of Organic CPM (m_o) (Section 11.2.3)	_____ mg
Mass of Inorganic CPM (m_i) (Equation 3)	_____ mg
Total CPM Mass (m_{cpm}) (Equation 4)	_____ mg

Figure 6. CPM Work Table

BILLING CODE 5560-50-C

* * * * *

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

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

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

Subpart A—[Amended]

■ 4. Amend § 60.8 by revising paragraph (g)(1) and adding new paragraphs (h) and (i) to read as follows:

§ 60.8 Performance tests.

* * * * *

(g) * * *

(1) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60, Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60, Methods 18 and 19 of appendix A-6 of part 60, Methods 20, 22, and 25A of appendix A-7 of part 60, Methods 30A and 30B of appendix A-8 of part 60, and Methods 303, 318, 320, and 321 of appendix A of part 63 of this chapter. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance

authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, www.epa.gov/ttn/emc, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to

include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request and the compliance authority may grant a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

(h) Unless otherwise specified in the applicable subpart, each test location must be verified to be free of cyclonic flow and evaluated for the existence of emission gas stratification and the required number of sampling traverse points. If other procedures are not specified in the applicable subpart to the regulations, use the appropriate procedures in Method 1 to check for cyclonic flow and Method 7E to evaluate emission gas stratification and selection of sampling points.

(i) Whenever the use of multiple calibration gases is required by a test method, performance specification, or quality assurance procedure in a part 60 standard or appendix, Method 205 of 40 CFR part 51, appendix M of this

chapter, "Verification of Gas Dilution Systems for Field Instrument Calibrations," may be used.

■ 5. Amend § 60.13 by revising paragraph (d)(1) to read as follows:

§ 60.13 Monitoring requirements.

* * * * *

(d)(1) Owners and operators of a CEMS installed in accordance with the provisions of this part, must check the zero (or low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once each operating day in accordance with a written procedure. The zero and span must, at a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit of the applicable performance specification in appendix B of this part. The system must allow the amount of the excess zero and span drift to be recorded and quantified whenever specified. Owners and operators of a COMS installed in accordance with the provisions of this part must check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is defined in the applicable version of PS-1 in appendix B of this part. For a COMS, the optical surfaces, exposed to the effluent gases, must be cleaned before performing the zero and upscale drift adjustments, except for systems using automatic zero adjustments. The optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

* * * * *

■ 6. Revise § 60.17 to read as follows:

§ 60.17 Incorporations by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the EPA must publish notice of change in the *Federal Register* and the material must be available to the public. All approved material is available for inspection at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M St. SW., Washington, DC, telephone number 202-566, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030 or go to <http://www.archives.gov/>

federal register/code_of_federal_regulations/ibr_locations.html.

(b) American Gas Association, available through ILI Infodisk, 610 Winters Avenue, Paramus, New Jersey 07652:

(1) American Gas Association Report No. 3: Orifice Metering for Natural Gas and Other Related Hydrocarbon Fluids, Part 1: General Equations and Uncertainty Guidelines (1990), IBR approved for § 60.107a(d).

(2) American Gas Association Report No. 3: Orifice Metering for Natural Gas and Other Related Hydrocarbon Fluids, Part 2: Specification and Installation Requirements (2000), IBR approved for § 60.107a(d).

(3) American Gas Association Report No. 11: Measurement of Natural Gas by Coriolis Meter (2003), IBR approved for § 60.107a(d).

(4) American Gas Association Transmission Measurement Committee Report No. 7: Measurement of Gas by Turbine Meters (Revised February 2006), IBR approved for § 60.107a(d).

(c) American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675-2683. You may inspect a copy at the EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-124), Room M-1500, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

(1) An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities. American Society for Health Care Environmental Services of the American Hospital Association. Chicago, Illinois. 1993. AHA Catalog No. 057007. ISBN 0-87258-673-5. IBR approved for §§ 60.35e and 60.55c.

(2) [Reserved]

(d) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved for §§ 60.111(i), 60.111a(f), and 60.116b(e).

(2) API Manual of Petroleum Measurement Standards, Chapter 22—Testing Protocol, Section 2—Differential Pressure Flow Measurement Devices, First Edition, August 2005, IBR approved for § 60.107a(d).

(e) American Public Health Association, 1015 18th Street NW., Washington, DC 20036.

(1) "Standard Methods for the Examination of Water and Wastewater," 16th edition, 1985. Method 303F: "Determination of Mercury by the Cold Vapor Technique." Incorporated by reference for appendix A-8 to part 60, Method 29, §§ 9.2.3, 10.3, and 11.1.3.

(2) 2540 G. Total, Fixed, and Volatile Solids in Solid and Semisolid Samples, in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, IBR approved for § 60.154(b).

(f) American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990, Telephone (800) 843-2763, <http://www.asme.org>.

(1) ASME Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th Edition (1971), IBR approved for §§ 60.58a(h), 60.58b(i), 60.1320(a), and 60.1810(a).

(2) ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, IBR approved for § 60.107a(d).

(3) ASME/ANSI MFC-4M-1986 (Reaffirmed 2008), Measurement of Gas Flow by Turbine Meters, IBR approved for § 60.107a(d).

(4) ASME/ANSI MFC-5M-1985 (Reaffirmed 2006), Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters, IBR approved for § 60.107a(d).

(5) ASME MFC-6M-1998 (Reaffirmed 2005), Measurement of Fluid Flow in Pipes Using Vortex Flowmeters, IBR approved for § 60.107a(d).

(6) ASME/ANSI MFC-7M-1987 (Reaffirmed 2006), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles, IBR approved for § 60.107a(d).

(7) ASME/ANSI MFC-9M-1988 (Reaffirmed 2006), Measurement of Liquid Flow in Closed Conduits by Weighing Method, IBR approved for § 60.107a(d).

(8) ASME MFC-11M-2006, Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters, IBR approved for § 60.107a(d).

(9) ASME MFC-14M-2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters, IBR approved for § 60.107a(d).

(10) ASME MFC-16-2007, Measurement of Liquid Flow in Closed Conduits with Electromagnetic Flowmeters, IBR approved for § 60.107a(d).

(11) ASME MFC-18M-2001, Measurement of Fluid Flow Using Variable Area Meters, IBR approved for § 60.107a(d).

(12) ASME MFC-22-2007, Measurement of Liquid by Turbine Flowmeters, IBR approved for § 60.107a(d).

(13) ASME PTC 4.1-1964 (Reaffirmed 1991), Power Test Codes: Test Code for Steam Generating Units (with 1968 and 1969 Addenda), IBR approved for §§ 60.46b, 60.58a(h), 60.58b(i), 60.1320(a), and 60.1810(a).

(14) ASME/ANSI PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], (Issued August 31, 1981), IBR approved for §§ 60.56c(b), 60.63(f), 60.106(e), 60.104a(d), (h), (i), and (j), 60.105a(d), (f), and (g), § 60.106a(a), § 60.107a(a), (c), and (d), tables 1 and 3 to subpart EEEE, tables 2 and 4 to subpart FFFF, table 2 to subpart JJJJ, §§ 60.4415(a), 60.2145(s) and (t), 60.2710(s), (t), and (w), 60.2730(q), 60.4900(b), 60.5220(b), tables 1 and 2 to subpart LLLL, tables 2 and 3 to subpart MMMM, §§ 60.5406(c) and 60.5413(b).

(15) ASME QRO-1-1994, Standard for the Qualification and Certification of Resource Recovery Facility Operators, IBR approved for §§ 60.54b(a) and (b), 60.56a, 60.1185(a) and (c), and 60.1675(a) and (c).

(g) American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428-2959; also available through ProQuest, 300 North Zeeb Road, Ann Arbor, MI 48106.

(1) ASTM A99-76, Standard Specification for Ferromanganese, IBR approved for § 60.261.

(2) ASTM A99-82 (Reapproved 1987), Standard Specification for Ferromanganese, IBR approved for § 60.261.

(3) ASTM A100-69, Standard Specification for Ferrosilicon, IBR approved for § 60.261.

(4) ASTM A100-74, Standard Specification for Ferrosilicon, IBR approved for § 60.261.

(5) ASTM A100-93, Standard Specification for Ferrosilicon, IBR approved for § 60.261.

(6) ASTM A101-73, Standard Specification for Ferrochromium, IBR approved for § 60.261.

(7) ASTM A101-93, Standard Specification for Ferrochromium, IBR approved for § 60.261.

(8) ASTM A482-76, Standard Specification for Ferrochromesilicon, IBR approved for § 60.261.

(9) ASTM A482-93, Standard Specification for Ferrochromesilicon, IBR approved for § 60.261.

(10) ASTM A483-64, Standard Specification for Silicomanganese, IBR approved for § 60.261.

(11) ASTM A483-74 (Reapproved 1988), Standard Specification for Silicomanganese, IBR approved for § 60.261.

(12) ASTM A495-76, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved for § 60.261.

(13) ASTM A495-94, Standard Specification for Calcium-Silicon and

Calcium Manganese-Silicon, IBR approved for § 60.261.

(14) ASTM D86-78, Distillation of Petroleum Products, IBR approved for §§ 60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(15) ASTM D86-82, Distillation of Petroleum Products, IBR approved for §§ 60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(16) ASTM D86-90, Distillation of Petroleum Products, IBR approved for §§ 60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(17) ASTM D86-93, Distillation of Petroleum Products, IBR approved for §§ 60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(18) ASTM D86-95, Distillation of Petroleum Products, IBR approved for §§ 60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(19) ASTM D86-96, Distillation of Petroleum Products, (Approved April 10, 1996), IBR approved for §§ 60.562-2(d), 60.593(d), 60.593a(d), 60.633(h), and 60.5401(f).

(20) ASTM D129-64, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§ 60.106(j) and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(21) ASTM D129-78, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§ 60.106(j) and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(22) ASTM D129-95, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§ 60.106(j) and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(23) ASTM D129-00, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for § 60.335(b).

(24) ASTM D129-00 (Reapproved 2005), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for § 60.4415(a).

(25) ASTM D240-76, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for §§ 60.46(c), 60.296(b), and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(26) ASTM D240-92, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for §§ 60.46(c), 60.296(b), and appendix A-7: Method 19, Section 12.5.2.2.3.

(27) ASTM D240-02 (Reapproved 2007), Standard Test Method for Heat of Combustion of Liquid Hydrocarbon

Fuels by Bomb Calorimeter, (Approved May 1, 2007), IBR approved for § 60.107a(d).

(28) ASTM D270–65, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.2.1.

(29) ASTM D270–75, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.2.1.

(30) ASTM D323–82, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for §§ 60.111(l), 60.111a(g), 60.111b, and 60.116b(f).

(31) ASTM D323–94, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for §§ 60.111(l), 60.111a(g), 60.111b, and 60.116b(f).

(32) ASTM D388–77, Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(33) ASTM D388–90, Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(34) ASTM D388–91, Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(35) ASTM D388–95, Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(36) ASTM D388–98a, Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(37) ASTM D388–99 (Reapproved 2004) e, ¹ Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(38) ASTM D396–78, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b, 60.41c, 60.111(b), and 60.111a(b).

(39) ASTM D396–89, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b, 60.41c, 60.111(b), and 60.111a(b).

(40) ASTM D396–90, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b, 60.41c, 60.111(b), and 60.111a(b).

(41) ASTM D396–92, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b, 60.41c, 60.111(b), and 60.111a(b).

(42) ASTM D396–98, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b, 60.41c, 60.111(b), and 60.111a(b).

(43) ASTM D975–78, Standard Specification for Diesel Fuel Oils, IBR approved for §§ 60.111(b) and 60.111a(b).

(44) ASTM D975–96, Standard Specification for Diesel Fuel Oils, IBR approved for §§ 60.111(b) and 60.111a(b).

(45) ASTM D975–98a, Standard Specification for Diesel Fuel Oils, IBR approved for §§ 60.111(b) and 60.111a(b).

(46) ASTM D975–08a, Standard Specification for Diesel Fuel Oils, IBR approved for §§ 60.41b and 60.41c.

(47) ASTM D1072–80, Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for § 60.335(b).

(48) ASTM D1072–90 (Reapproved 1994), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for § 60.335(b).

(49) ASTM D1072–90 (Reapproved 1999), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for § 60.4415(a).

(50) ASTM D1137–53, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved for § 60.45(f).

(51) ASTM D1137–75, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved for § 60.45(f).

(52) ASTM D1193–77, Standard Specification for Reagent Water, IBR approved for appendix A–3 to part 60: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; appendix A–4 to part 60: Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; appendix A–5 to part 60: Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; appendix A–8 to part 60: Method 26, Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

(53) ASTM D1193–91, Standard Specification for Reagent Water, IBR approved for appendix A–3 to part 60: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; appendix A–4 to part 60: Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; appendix A–5 to part 60: Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; appendix A–8 to part 60: Method 26,

Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

(54) ASTM D1266–87, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§ 60.106(j) and 60.335(b).

(55) ASTM D1266–91, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§ 60.106(j) and 60.335(b).

(56) ASTM D1266–98, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§ 60.106(j) and 60.335(b).

(57) ASTM D1266–98 (Reapproved 2003) e, ¹ Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for § 60.4415(a).

(58) ASTM D1475–60 (Reapproved 1980), Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for § 60.435(d), appendix A–8 to part 60: Method 24, Section 6.1; and Method 24A, Sections 6.5 and 7.1.

(59) ASTM D1475–90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for § 60.435(d), appendix A–8 to part 60: Method 24, Section 6.1; and Method 24A, §§ 6.5 and 7.1.

(60) ASTM D1552–83, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§ 60.106(j), 60.335(b), and appendix A–7 to part 60: Method 19, Section 12.5.2.2.3.

(61) ASTM D1552–95, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§ 60.106(j), 60.335(b), and appendix A–7 to part 60: Method 19, Section 12.5.2.2.3.

(62) ASTM D1552–01, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§ 60.106(j), 60.335(b), and appendix A–7 to part 60: Method 19, Section 12.5.2.2.3.

(63) ASTM D1552–03, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for § 60.4415(a).

(64) ASTM D1826–77, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved for §§ 60.45(f), 60.46(c), 60.296(b), and appendix A–7 to part 60: Method 19, Section 12.3.2.4.

(65) ASTM D1826–94, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved for §§ 60.45(f), 60.46(c), 60.296(b), and appendix A–7 to part 60: Method 19, Section 12.3.2.4.

(66) ASTM D1826–94 (Reapproved 2003), Standard Test Method for

Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, (Approved May 10, 2003), IBR approved for § 60.107a(d).

(67) ASTM D1835–87, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§ 60.41Da, 60.41b, and 60.41c.

(68) ASTM D1835–91, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§ 60.41Da, 60.41b, and 60.41c.

(69) ASTM D1835–97, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§ 60.41Da, 60.41b, and 60.41c.

(70) ASTM D1835–03a, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§ 60.41Da, 60.41b, and 60.41c.

(71) ASTM D1945–64, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for § 60.45(f).

(72) ASTM D1945–76, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for § 60.45(f).

(73) ASTM D1945–91, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for § 60.45(f).

(74) ASTM D1945–96, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for § 60.45(f).

(75) ASTM D1945–03 (Reapproved 2010), Standard Method for Analysis of Natural Gas by Gas Chromatography, (Approved January 1, 2010), IBR approved for §§ 60.107a(d) and 60.5413(d).

(76) ASTM D1946–77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§ 60.18(f), 60.45(f), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(77) ASTM D1946–90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§ 60.18(f), 60.45(f), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(78) ASTM D1946–90 (Reapproved 2006), Standard Method for Analysis of Reformed Gas by Gas Chromatography, (Approved June 1, 2006), IBR approved for § 60.107a(d).

(79) ASTM D2013–72, Standard Method of Preparing Coal Samples for Analysis, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(80) ASTM D2013–86, Standard Method of Preparing Coal Samples for Analysis, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(81) ASTM D2015–77 (Reapproved 1978), Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved for §§ 60.45(f), 60.46(c), and appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(82) ASTM D2015–96, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved for §§ 60.45(f), 60.46(c), and appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(83) ASTM D2016–74, Standard Test Methods for Moisture Content of Wood, IBR approved for appendix A–8 to part 60: Method 28, Section 16.1.1.

(84) ASTM D2016–83, Standard Test Methods for Moisture Content of Wood, IBR approved for appendix A–8 to part 60: Method 28, Section 16.1.1.

(85) ASTM D2234–76, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.1.

(86) ASTM D2234–96, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.1.

(87) ASTM D2234–97b, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.1.

(88) ASTM D2234–98, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.1.

(89) ASTM D2369–81, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A–8 to part 60: Method 24, Section 6.2.

(90) ASTM D2369–87, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A–8 to part 60: Method 24, Section 6.2.

(91) ASTM D2369–90, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A–8 to part 60: Method 24, Section 6.2.

(92) ASTM D2369–92, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A–8 to part 60: Method 24, Section 6.2.

(93) ASTM D2369–93, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A–8 to part 60: Method 24, Section 6.2.

(94) ASTM D2369–95, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A–8 to part 60: Method 24, Section 6.2.

(95) ASTM D2382–76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision

Method), IBR approved for §§ 60.18(f), 60.485(g), 60.485a(g), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(96) ASTM D2382–88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§ 60.18(f), 60.485(g), 60.485a(g), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(97) ASTM D2504–67, Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§ 60.485(g) and 60.485a(g).

(98) ASTM D2504–77, Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§ 60.485(g) and 60.485a(g).

(99) ASTM D2504–88 (Reapproved 1993), Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§ 60.485(g) and 60.485a(g).

(100) ASTM D2584–68 (Reapproved 1985), Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved for § 60.685(c).

(101) ASTM D2584–94, Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved for § 60.685(c).

(102) ASTM D2597–94 (Reapproved 1999), Standard Test Method for Analysis of Demethanized Hydrocarbon Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography, IBR approved for § 60.335(b).

(103) ASTM D2622–87, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§ 60.106(j) and 60.335(b).

(104) ASTM D2622–94, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§ 60.106(j) and 60.335(b).

(105) ASTM D2622–98, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§ 60.106(j) and 60.335(b).

(106) ASTM D2622–05, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for § 60.4415(a).

(107) ASTM D2879–83 Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§ 60.111b(f)(3), 60.116b(e), 60.116b(f), 60.485(e), and 60.485a(e).

(108) ASTM D2879–96, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition

Temperature of Liquids by Isotenoscope, IBR approved for §§ 60.111b(f)(3), 60.116b(e), 60.116b(f), 60.485(e), and 60.485a(e).

(109) ASTM D2879–97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isotenoscope, IBR approved for §§ 60.111b(f)(3), 60.116b(e), 60.116b(f), 60.485(e), and 60.485a(e).

(110) ASTM D2880–78, Standard Specification for Gas Turbine Fuel Oils, IBR approved for §§ 60.111(b), 60.111a(b), and 60.335(d).

(111) ASTM D2880–96, Standard Specification for Gas Turbine Fuel Oils, IBR approved for §§ 60.111(b), 60.111a(b), and 60.335(d).

(112) ASTM D2908–74, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for § 60.564(j).

(113) ASTM D2908–91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for § 60.564(j).

(114) ASTM D2986–71, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test, IBR approved for appendix A–3 to part 60: Method 5, Section 7.1.1; appendix A–5 to part 60: Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(115) ASTM D2986–78, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test, IBR approved for appendix A–3 to part 60: Method 5, Section 7.1.1; appendix A–5 to part 60: Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(116) ASTM D2986–95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test, IBR approved for appendix A–3 to part 60: Method 5, Section 7.1.1; appendix A–5 to part 60: Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(117) ASTM D3173–73, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(118) ASTM D3173–87, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(119) ASTM D3176–74, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved for § 60.45(f)(5)(i) and appendix A–7 to part 60: Method 19, Section 12.3.2.3.

(120) ASTM D3176–89, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved for § 60.45(f)(5)(i) and appendix A–7 to part 60: Method 19, Section 12.3.2.3.

(121) ASTM D3177–75, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(122) ASTM D3177–89, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(123) ASTM D3178–73 (Reapproved 1979), Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved for § 60.45(f).

(124) ASTM D3178–89, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved for § 60.45(f).

(125) ASTM D3246–81, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for § 60.335(b).

(126) ASTM D3246–92, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for § 60.335(b).

(127) ASTM D3246–96, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for § 60.335(b).

(128) ASTM D3246–05, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for § 60.4415(a)(1).

(129) ASTM D3270–73T, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A–5 to part 60: Method 13A, Section 16.1.

(130) ASTM D3270–80, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A–5 to part 60: Method 13A, Section 16.1.

(131) ASTM D3270–91, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A–5 to part 60: Method 13A, Section 16.1.

(132) ASTM D3270–95, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A–5 to part 60: Method 13A, Section 16.1.

(133) ASTM D3286–85, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for appendix

A–7 to part 60: Method 19, Section 12.5.2.1.3.

(134) ASTM D3286–96, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(135) ASTM D3370–76, Standard Practices for Sampling Water, IBR approved for § 60.564(j).

(136) ASTM D3370–95a, Standard Practices for Sampling Water, IBR approved for § 60.564(j).

(137) ASTM D3588–98 (Reapproved 2003), Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, (Approved May 10, 2003), IBR approved for §§ 60.107a(d) and 60.5413(d).

(138) ASTM D3699–08, Standard Specification for Kerosine, including Appendix X1, (Approved September 1, 2008), IBR approved for §§ 60.41b and 60.41c.

(139) ASTM D3792–79, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A–7 to part 60: Method 24, Section 6.3.

(140) ASTM D3792–91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A–7 to part 60: Method 24, Section 6.3.

(141) ASTM D4017–81, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A–7 to part 60: Method 24, Section 6.4.

(142) ASTM D4017–90, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A–7 to part 60: Method 24, Section 6.4.

(143) ASTM D4017–96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A–7 to part 60: Method 24, Section 6.4.

(144) ASTM D4057–81, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.2.3.

(145) ASTM D4057–95, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.2.3.

(146) ASTM D4057–95 (Reapproved 2000), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for § 60.4415(a).

(147) ASTM D4084–82, Standard Test Method for Analysis of Hydrogen

Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for § 60.334(h).

(148) ASTM D4084–94, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for § 60.334(h).

(149) ASTM D4084–05, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for §§ 60.4360 and 60.4415(a).

(150) ASTM D4177–95, Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.2.1.

(151) ASTM D4177–95 (Reapproved 2000), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for § 60.4415(a).

(152) ASTM D4239–85, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(153) ASTM D4239–94, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(154) ASTM D4239–97, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(155) ASTM D4294–02, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for § 60.335(b).

(156) ASTM D4294–03, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for § 60.4415(a).

(157) ASTM D4442–84, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for appendix A–8 to part 60: Method 28, Section 16.1.1.

(158) ASTM D4442–92, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for appendix A–8 to part 60: Method 28, Section 16.1.1.

(159) ASTM D4444–92, Standard Test Methods for Use and Calibration of

Hand-Held Moisture Meters, IBR approved for appendix A–8 to part 60: Method 28, Section 16.1.1.

(160) ASTM D4457–85 (Reapproved 1991), Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph, IBR approved for appendix A–7 to part 60: Method 24, Section 6.5.

(161) ASTM D4468–85 (Reapproved 2000), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, IBR approved for §§ 60.335(b) and 60.4415(a).

(162) ASTM D4468–85 (Reapproved 2006), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, (Approved June 1, 2006), IBR approved for § 60.107a(e).

(163) ASTM D4629–02, Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection, IBR approved for §§ 60.49b(e) and 60.335(b).

(164) ASTM D4809–95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for §§ 60.18(f), 60.485(g), 60.485a(g), 60.564(f), 60.614(d), 60.664(e), and 60.704(d).

(165) ASTM D4809–06, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), (Approved December 1, 2006), IBR approved for § 60.107a(d).

(166) ASTM D4810–88 (Reapproved 1999), Standard Test Method for Hydrogen Sulfide in Natural Gas Using Length of Stain Detector Tubes, IBR approved for §§ 60.4360 and 60.4415(a).

(167) ASTM D4891–89 (Reapproved 2006) Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, (Approved June 1, 2006), IBR approved for §§ 60.107a(d) and 60.5413(d).

(168) ASTM D5287–97 (Reapproved 2002), Standard Practice for Automatic Sampling of Gaseous Fuels, IBR approved for § 60.4415(a).

(169) ASTM D5403–93, Standard Test Methods for Volatile Content of Radiation Curable Materials, IBR approved for appendix A–7 to part 60: Method 24, Section 6.6.

(170) ASTM D5453–00, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for § 60.335(b).

(171) ASTM D5453–05, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for § 60.4415(a).

(172) ASTM D5504–01, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, IBR approved for §§ 60.334(h) and 60.4360.

(173) ASTM D5504–08, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, (Approved June 15, 2008), IBR approved for §§ 60.107a(e) and 60.5413(d).

(174) ASTM D5762–02, Standard Test Method for Nitrogen in Petroleum and Petroleum Products by Boat-Inlet Chemiluminescence, IBR approved for § 60.335(b).

(175) ASTM D5865–98, Standard Test Method for Gross Calorific Value of Coal and Coke, IBR approved for §§ 60.45(f) and 60.46(c), and appendix A–7 to part 60: Method 19, Section 12.5.2.1.3.

(176) ASTM D5865–10, Standard Test Method for Gross Calorific Value of Coal and Coke, (Approved January 1, 2010), IBR approved for §§ 60.45(f), 60.46(c), and appendix A–7 to part 60: Method 19, section 12.5.2.1.3.

(177) ASTM D6216–98, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, IBR approved for appendix B to part 60: Performance Specification 1.

(178) ASTM D6228–98, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for § 60.334(h).

(179) ASTM D6228–98 (Reapproved 2003), Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for §§ 60.4360 and 60.4415.

(180) ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, (Approved October 1, 2003), IBR approved for § 60.73a(b), table 7 to subpart III, and table 2 to subpart JJJ.

(181) ASTM D6366–99, Standard Test Method for Total Trace Nitrogen and Its Derivatives in Liquid Aromatic Hydrocarbons by Oxidative Combustion and Electrochemical Detection, IBR approved for § 60.335(b)(9).

(182) ASTM D6420–99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, (Approved October 1, 2004), IBR approved for § 60.107a(d) and table 2 to subpart JJJJ.

(183) ASTM D6522–00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for § 60.335(a).

(184) ASTM D6522–00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, (Approved October 1, 2005), IBR approved for table 2 to subpart JJJJ, and §§ 60.5413(b) and (d).

(185) ASTM D6667–01, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for § 60.335(b).

(186) ASTM D6667–04, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for § 60.4415(a).

(187) ASTM D6751–11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, including Appendices X1 through X3, (Approved July 15, 2011), IBR approved for §§ 60.41b and 60.41c.

(188) ASTM D6784–02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), IBR approved for § 60.56c(b) and appendix B to part 60: Performance Specification 12A, Section 8.6.2.

(189) 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 §§ 60.2165(j) and 60.2730(j), tables 1, 5, 6 and 8 to subpart CCCC, and tables 2, 6, 7, and 9 to subpart DDDD, §§ 60.4900(b), 60.5220(b), tables 1 and 2 to subpart LLLL, and tables 2 and 3 to subpart MMMM.

(190) ASTM D7467–10, Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20), including

Appendices X1 through X3, (Approved August 1, 2010), IBR approved for §§ 60.41b and 60.41c.

(191) ASTM E168–67, General Techniques of Infrared Quantitative Analysis, IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(192) ASTM E168–77, General Techniques of Infrared Quantitative Analysis, IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(193) ASTM E168–92, General Techniques of Infrared Quantitative Analysis, IBR approved for §§ 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), 60.632(f), and 60.5400.

(194) ASTM E169–63, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(195) ASTM E169–77, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for §§ 60.485a(d), 60.593(b), and 60.593a(b), 60.632(f).

(196) ASTM E169–93, General Techniques of Ultraviolet Quantitative Analysis, (Approved May 15, 1993), IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), 60.632(f), and 60.5400(f).

(197) ASTM E260–73, General Gas Chromatography Procedures, IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(198) ASTM E260–91, General Gas Chromatography Procedures, (IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(199) ASTM E260–96, General Gas Chromatography Procedures, (Approved April 10, 1996), IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), 60.632(f), 60.5400(f), and 60.5406(b).

(200) ASTM E1584–11, Standard Test Method for Assay of Nitric Acid, (Approved August 1, 2011), IBR approved for § 60.73a(c).

(201) ASTM UOP539–97, Refinery Gas Analysis by Gas Chromatography, (Copyright 1997), IBR approved for § 60.107a(d).

(h) Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.

(1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC), 11th edition, 1970, pp. 11–12, IBR approved for §§ 60.204(b), 60.214(b), 60.224(b), and 60.234(b).

(2) [Reserved]

(i) U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460, (202) 272–0167, <http://www.epa.gov>.

(1) EPA–454/R–98–015, Office of Air Quality Planning and Standards

(OAQPS) Fabric Filter Bag Leak Detection Guidance, September 1997, IBR approved for §§ 60.2145(r), 60.2710(r), 60.4905(b), and 60.5225(b).

(2) [Reserved]

(j) The Gas Processors Association, 6526 East 60th Street, Tulsa, OK 74145; also available through Information Handling Services, 15 Inverness Way East, PO Box 1154, Englewood, CO 80150–1154. You may inspect a copy at the EPA's Air and Radiation Docket and Information Center, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460.

(1) Gas Processors Association Standard 2172–09, Calculation of Gross Heating Value, Relative Density, Compressibility and Theoretical Hydrocarbon Liquid Content for Natural Gas Mixtures for Custody Transfer (2009), IBR approved for § 60.107a(d).

(2) Gas Processors Association Standard 2261–00, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (2000), IBR approved for § 60.107a(d).

(3) Gas Processors Association Standard 2377–86, Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes, 1986 Revision, IBR approved for §§ 60.105(b), 60.107a(b), 60.334(h), 60.4360, and 60.4415(a).

(k) International Organization for Standardization (ISO) available through IHS Inc., 15 Inverness Way East, Englewood, CO 80112.

(1) ISO 8178–4: 1996(E), Reciprocating Internal Combustion Engines—Exhaust Emission Measurement—part 4: Test Cycles for Different Engine Applications, IBR approved for § 60.4241(b).

(2) [Reserved]

(l) International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH–1211 Geneva 20, Switzerland, +41 22 749 01 11, <http://www.iso.org/iso/home.htm>.

(1) ISO 8316: Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank (1987–10–01)—First Edition, IBR approved for § 60.107a(d).

(2) [Reserved]

(m) This material is available for purchase from the National Technical Information Services (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161. You may inspect a copy at the EPA's Air and Radiation Docket and Information Center (Docket A–91–61, Item IV–J–125), Room M–1500, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

(1) OMB Bulletin No. 93–17: Revised Statistical Definitions for Metropolitan Areas. Office of Management and

Budget, June 30, 1993. NTIS No. PB 93-192-664. IBR approved for § 60.31e.

(2) [Reserved]

(n) North American Electric Reliability Corporation, 1325 G Street NW., Suite 600, Washington, DC 20005-3801, <http://www.nerc.com>.

(1) North American Electric Reliability Corporation Reliability Standard EOP-002-3, Capacity and Energy Emergencies, updated November 19, 2012, IBR approved for §§ 60.4211(f) and 60.4243(d). Also available online: http://www.nerc.com/files/EOP-002-3_1.pdf.

(2) [Reserved]

(o) Technical Association of the Pulp and Paper Industry (TAPPI), Dunwoody Park, Atlanta, GA 30341.

(1) TAPPI Method T624 os-68, IBR approved for § 60.285(d).

(2) [Reserved]

(p) Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance, IBR approved for Appendix A-8 to part 60.

(2) [Reserved]

(q) Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, DC 20037.

(1) Method 209A, Total Residue Dried at 103–105 °C, in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, IBR approved for § 60.683(b).

(2) [Reserved]

(r) West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, OR 97223.

(1) West Coast Lumber Standard Grading Rules No. 16, pages 5–21, 90 and 91, September 3, 1970, revised 1984, IBR approved for Appendix A-8 to part 60.

(2) [Reserved]

Subpart Db—[Amended]

■ 7. Amend § 60.46b by revising paragraphs (f)(1)(ii) and (h)(1) and (h)(2) to read as follows:

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

* * * * *

(f) * * *

(1) * * *

(ii) Method 7E of appendix A of this part or Method 320 of appendix A of part 63 shall be used to determine the NO_x concentrations. Method 3A or 3B of appendix A of this part shall be used to determine O₂ concentration.

* * * * *

(h) * * *

(1) Conduct an initial performance test as required under § 60.8 over a minimum of 24 consecutive steam generating unit operating hours at maximum heat input capacity to demonstrate compliance with the NO_x emission standards under § 60.44b using Method 7, 7A, or 7E of appendix A of this part, Method 320 of appendix A of part 63 of this chapter, or other approved reference methods; and

(2) Conduct subsequent performance tests once per calendar year or every 400 hours of operation (whichever comes first) to demonstrate compliance with the NO_x emission standards under § 60.44b over a minimum of 3 consecutive steam generating unit operating hours at maximum heat input capacity using Method 7, 7A, or 7E of appendix A of this part, Method 320 of appendix A of part 63, or other approved reference methods.

* * * * *

■ 8. Amend § 60.47b by revising paragraph (b)(2) to read as follows:

§ 60.47b Emission monitoring for sulfur dioxide.

* * * * *

(b) * * *

(2) Measuring SO₂ according to Method 6B of appendix A of this part at the inlet or outlet to the SO₂ control system. An initial stratification test is required to verify the adequacy of the sampling location for Method 6B of appendix A of this part. The stratification test shall consist of three paired runs of a suitable SO₂ and CO₂ measurement train operated at the candidate location and a second similar train operated according to the procedures in Section 3.2 and the applicable procedures in Section 7 of Performance Specification 2. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 or 3B of appendix A of this part or Methods 6C or Method 320 of appendix A of part 63 of this chapter and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part, 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent.

* * * * *

Subpart Ec—[Amended]

■ 9. Amend § 60.51c by revising the definition of “Medical/infectious waste” to read as follows:

§ 60.51c Definitions.

* * * * *

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that are listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in § 261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in § 261.4(a)(1) of this chapter.

(1) Cultures and stocks of infectious agents and associated biologicals, including: Cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

(3) Human blood and blood products including:

(i) Liquid waste human blood;
(ii) Products of blood;
(iii) Items saturated and/or dripping with human blood; or

(iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.

(4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and

culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

(5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

(6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

Subpart H—[Amended]

■ 10. Amend § 60.84 by revising the equation in paragraph (d) to read as follows:

§ 60.84 Emission monitoring.

* * * *

(d) * * *

$$E_s = (C_s S) / [0.265 - (0.0126 \% O_2) - (A \% CO_2)]$$

* * * *

Subpart O—[Amended]

■ 11. Amend § 60.154 by revising the introductory text to paragraph (b)(5) to read as follows:

§ 60.154 Test methods and procedures.

* * * *

(b) * * *

(5) Samples of the sludge charged to the incinerator shall be collected in nonporous jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends; and "2540 G. Total, Fixed, and Volatile Solids in Solid and Semisolid Samples, in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998" (incorporated by reference—see § 60.17) shall be used to determine dry sludge content of each sample (total solids residue), except that:

* * * *

Subpart BB—[Amended]

■ 12. Amend § 60.284 by revising the equation in paragraph (c)(3) to read as follows:

§ 60.284 Monitoring of emissions and operations.

* * * *

(c) * * *

(3) * * *

$$C_{corr} = C_{meas} \times (21 - X) / (21 - Y)$$

* * * *

Subpart GG—[Amended]

■ 13. Amend § 60.335 by revising the terms P_r and P_o for the equation in paragraph (b)(1) to read as follows:

§ 60.335 Test methods and procedures.

* * * *

(b) * * *

(1) * * *

P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure. Alternatively, you may use 760 mm Hg (29.92 in Hg).

P_o = observed combustor inlet absolute pressure at test, mm Hg. Alternatively, you may use the barometric pressure for the date of the test,

* * * *

Subpart KK—[Amended]

■ 14. Amend § 60.374 by revising paragraphs (b)(1), (b)(2), and (c)(2) to read as follows:

§ 60.374 Test methods and procedures.

* * * *

(b) * * *

(1) Method 12 or Method 29 shall be used to determine the lead concentration (C_{Pb}) and, if applicable, the volumetric flow rate (Q_{sda}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) When different operations in a three-process operation facility are ducted to separate control devices, the lead emission concentration (C) from the facility shall be determined as follows:

$$C = \left[\sum_{a=1}^n (C_a Q_{sda}) \right] / \sum_{a=1}^n Q_{sda}$$

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.

* * * *

(c) * * *

(2) Method 12 or Method 29 shall be used to determine the lead concentration (C_{Pb}) and the volumetric flow rate (Q_{sda}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

* * * *

Subpart LL—[Amended]

■ 15. Amend § 60.382 by revising paragraph (a)(1) to read as follows:

§ 60.382 Standard for particulate matter.

(a) * * *

(1) Contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.05 g/dscm).

* * * *

■ 16. Amend § 60.386 by revising paragraph (b)(2) to read as follows:

§ 60.386 Test methods and procedures.

* * * *

(b) * * *

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions and process fugitive emissions. The observer shall read opacity only when emissions are clearly identified as emanating solely from the affected facility being observed. A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval. This option is subject to the following limitations:

(i) No more than three emission points are read concurrently;

(ii) All three emission points must be within a 70° viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points; and

(iii) If an opacity reading for any one of the three emission points is within 5 percent opacity of the application standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

* * * *

Subpart UU—[Amended]

■ 17. Amend § 60.472 by revising paragraph (a)(1)(ii) to read as follows:

§ 60.472 Standards for particulate matter.

(a) * * *

(1) * * *

(ii) 0.4 kg/Mg (0.8 lb/ton) of saturated felt or smooth-surfaced roll roofing produced;

* * * * *

Subpart NNN—[Amended]

■ 18. Amend § 60.660 by revising paragraph (c)(4) to read as follows:

§ 60.660 Applicability and designation of affected facility.

* * * * *

(c) * * *

(4) Each affected facility that has a total resource effectiveness (TRE) index

value greater than 8.0 is exempt from all provisions of this subpart except for §§ 60.662; 60.664 (e), (f), and (g); and 60.665 (h) and (l).

* * * * *

■ 19. Amend § 60.665 by revising paragraphs (h)(2) and (h)(3) to read as follows:

§ 60.665 Reporting and recordkeeping requirements.

* * * * *

(h) * * *

(2) Any recalculation of the TRE index value performed pursuant to § 60.664(g); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.664(e).

* * * * *

Subpart IIII—[Amended]

■ 20. Revise Table 7 to Subpart IIII of part 60 to read as follows:

As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:

TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥30 LITERS PER CYLINDER

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥ 30 liters per cylinder	a. Reduce NO _x emissions by 90 percent or more;	i. Select the sampling port location and number/location of traverse points at the inlet and outlet of the control device;		(a) For NO _x , 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 O ₂ at the inlet and outlet of the control device;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O ₂ concentration must be made at the same time as the measurements for NO _x concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO _x concentration.
		iv. Measure NO _x at the inlet and outlet of the control device.	(3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(d) NO _x 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.

TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥30 LITERS PER CYLINDER—Continued

Each	Complying with the requirement to	You must	Using	According to the following requirements
	b. Limit the concentration of NO _x in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and number/location of traverse points at the exhaust of the stationary internal combustion engine; ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and iv. Measure NO_x at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.		(a) For NO_x, O₂, 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. (b) Measurements to determine O₂ concentration must be made at the same time as the measurement for NO_x concentration. (c) Measurements to determine moisture content must be made at the same time as the measurement for NO_x concentration. (d) NO_x concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points; ii. Measure O₂ at the inlet and outlet of the control device; iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1 (2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2 (3) Method 4 of 40 CFR part 60, appendix A-3	(a) Sampling sites must be located at the inlet and outlet of the control device. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for PM concentration. (c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.

TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥ 30 LITERS PER CYLINDER—Continued

Each	Complying with the requirement to	You must	Using	According to the following requirements
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust	iv. Measure PM at the inlet and outlet of the control device. i. Select the sampling port location and the number of traverse points; ii. Determine the O ₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, appendix A-3 (1) Method 1 or 1A of 40 CFR part 60, appendix A-1 (2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2 (3) Method 4 of 40 CFR part 60, appendix A-3 (4) Method 5 of 40 CFR part 60, appendix A-3.	(d) PM 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. (a) If using a control device, the sampling site must be located at the outlet of the control device. (b) Measurements to determine O ₂ concentration must be made at the same time as the measurements for PM concentration. (c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration. (d) PM 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.

Subpart JJJJ—[Amended]

■ 21. Revise Table 2 to Subpart JJJJ of part 60 to read as follows:

As stated in § 60.4244, you must comply with the following requirements for performance tests within 10 percent

of 100 percent peak (or the highest achievable) load:

TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary SI internal combustion engine demonstrating compliance according to § 60.4244.	a. limit the concentration of NO _x in the stationary SI internal combustion engine exhaust.	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary internal combustion engine; ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust; iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and v. Measure NO_x at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate. (2) Method 3, 3A, or 3B^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005)^{a,c}. (3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7. (4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03^e. (5) Method 7E of 40 CFR part 60, appendix A-4, ASTM Method D6522-00 (Reapproved 2005)^{a,c}, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03^e.	(a) Alternatively, for NO_x, O₂, 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. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for NO_x concentration. (c) Measurements to determine moisture must be made at the same time as the measurement for NO_x concentration. (d) Results of this test consist of the average of the three 1-hour or longer runs.

TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

For each	Complying with the requirement to	You must	Using	According to the following requirements
	b. limit the concentration of CO in the stationary SI internal combustion engine exhaust.	Select the sampling port location and the number/location of traverse points at the exhaust of the stationary internal combustion engine; ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust; iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and v. Measure CO at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate. (2) Method 3, 3A, or 3B^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005)^{a,c}. (3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7. (4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03^e. (5) Method 10 of 40 CFR part 60, appendix A4, ASTM Method D6522-00 (Reapproved 2005)^{a,c}, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03^e.	(a) Alternatively, for CO, O₂, 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. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for CO concentration. (c) Measurements to determine moisture must be made at the same time as the measurement for CO concentration. (d) Results of this test consist of the average of the three 1-hour or longer runs.

TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

For each	Complying with the requirement to	You must	Using	According to the following requirements
	c. limit the concentration of VOC in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary internal combustion engine; ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust; iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and v. Measure VOC at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate. (2) Method 3, 3A, or 3B^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Re-approved 2005)^{a,c}. (3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7. (4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03^e. (5) Methods 25A and 18 of 40 CFR part 60, appendices A-6 and A-7, Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 of 40 CFR part 60, appendix A-6^{c,d}, Method 320 of 40 CFR part 63, appendix A, or ASTM Method D 6348-03^e.	(a) Alternatively, for VOC, O₂, 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. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for VOC concentration. (c) Measurements to determine moisture must be made at the same time as the measurement for VOC concentration. (d) Results of this test consist of the average of the three 1-hour or longer runs.

^aAlso, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^bYou may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17.

^cYou may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's Web site (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^dYou may use ASTM D6420-99 (2004), Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry as an alternative to EPA Method 18 for measuring total nonmethane organic. ASTM D6420-99(2004) incorporated by reference; see 40 CFR 60.17.

^eIncorporated by reference; see 40 CFR 60.17.

■ 22. Amend appendix A–1 to part 60 as follows:

■ a. By amending Method 1 as follows:

■ i. By revising Figure 1–1 in section 17.

■ ii. By adding Figure 1–2 to section 17.

■ b. By amending Method 2 as follows:

■ i. By revising section 8.1, the note at the end of 10.1.1, and sections 10.4, 12.6, and 12.7.

■ ii. By removing the definition for Ts(abs) in section 12.1.

■ iii. By adding a definition for Ts(abavg) in alphabetical order to section 12.1.

■ c. By revising Method 2A, sections 10.3 and 12.2.

■ d. By revising Method 2B, section 12.1.

■ e. By revising Method 2D, section 10.4.

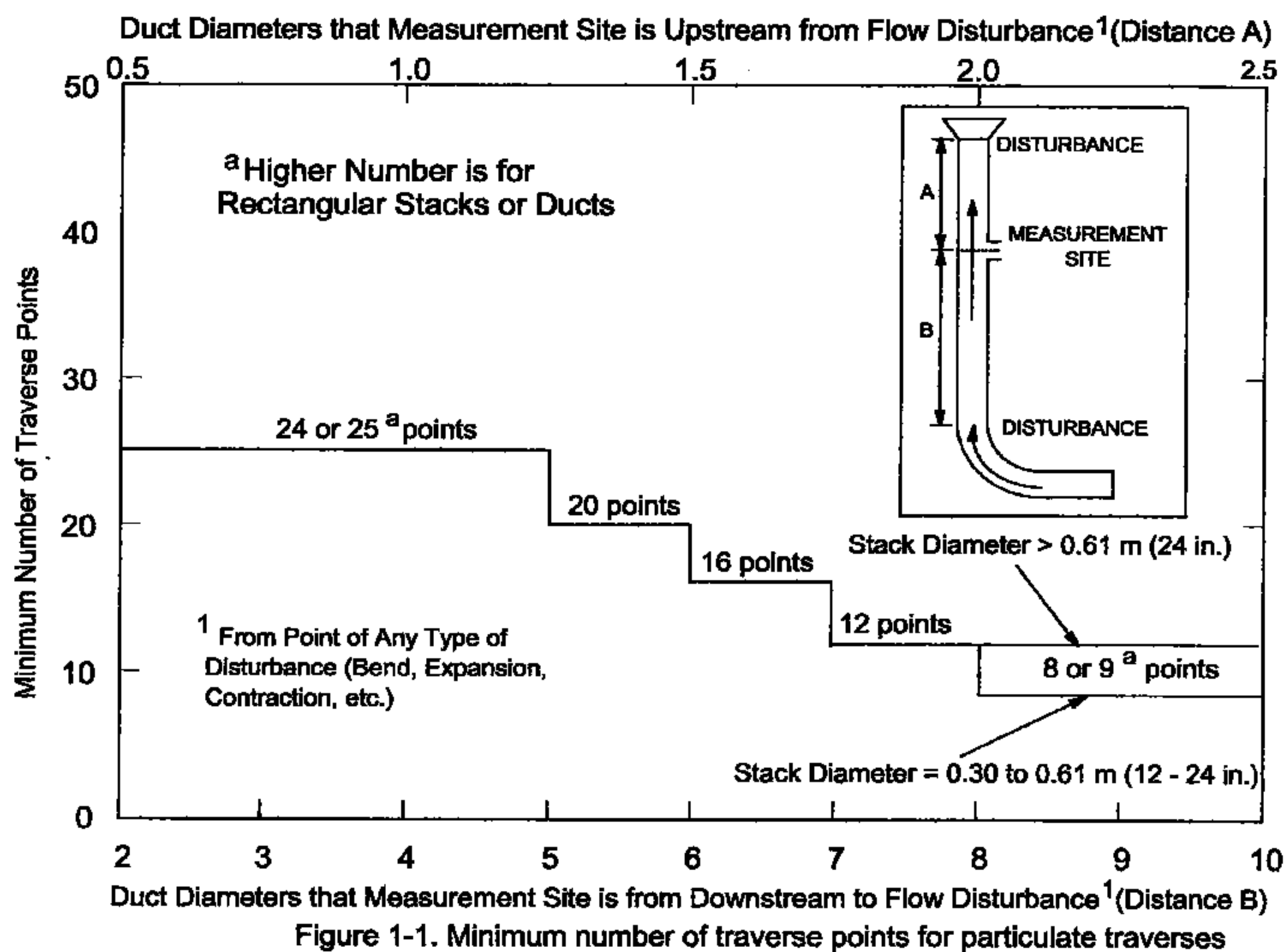
Appendix A–1 to Part 60—Test Methods 1 Through 2F

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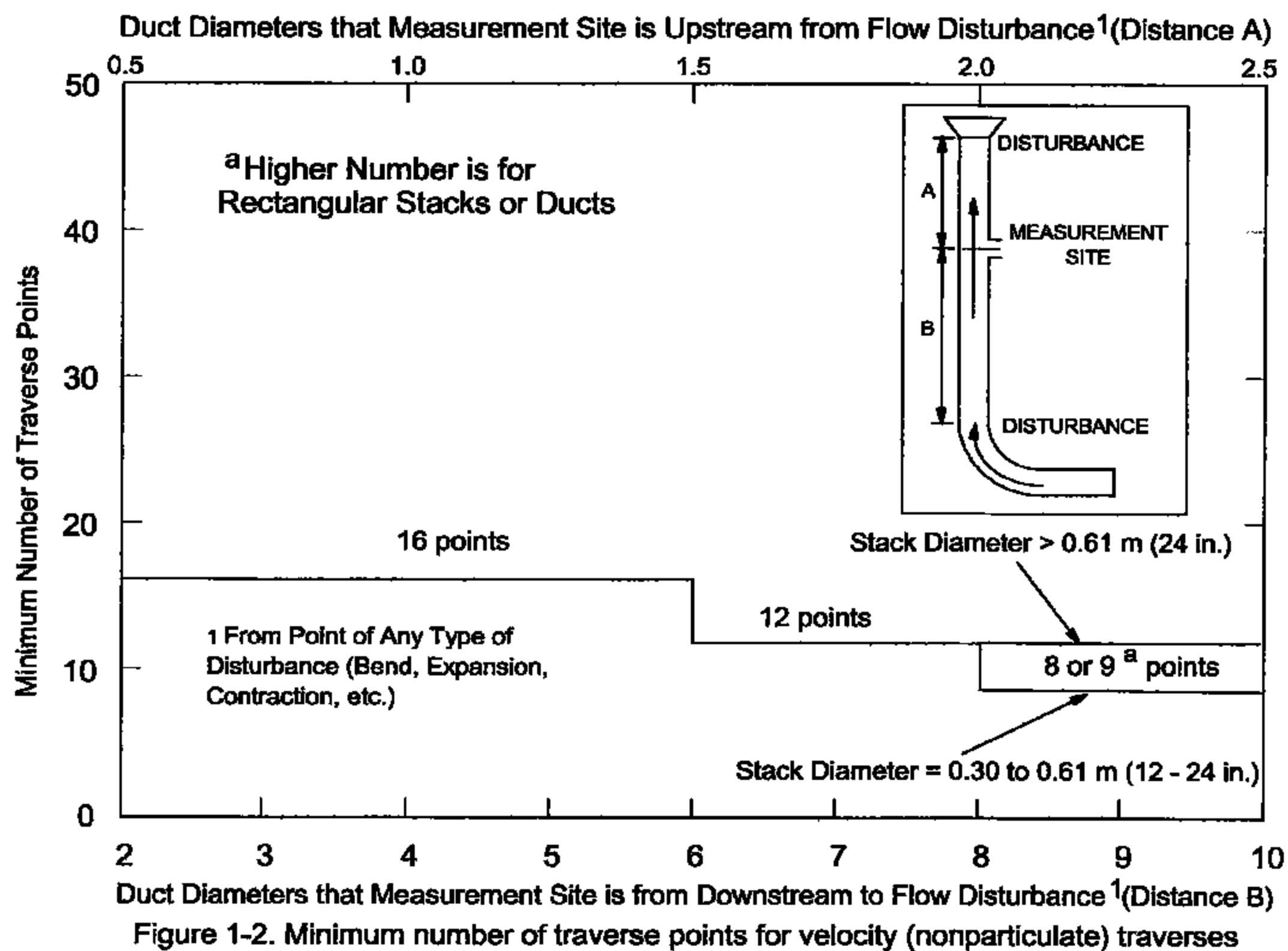
Method 1—Sample and Velocity Traverses From Stationary Sources

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17.0 * * *



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Method 2—Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

* * * * *

8.1 Set up the apparatus as shown in Figure 2-1. Capillary tubing or surge tanks installed between the manometer and pitot tube may be used to dampen ΔP fluctuations. It is recommended, but not required, that a pretest leak-check be conducted as follows: (1) blow through the pitot impact opening until at least 7.6 cm (3.0 in.) H_2O velocity head registers on the manometer; then, close off the impact opening. The pressure shall

remain stable (± 2.5 mm H_2O , ± 0.10 in. H_2O) for at least 15 seconds; (2) do the same for the static pressure side, except using suction to obtain the minimum of 7.6 cm (3.0 in.) H_2O . Other leak-check procedures, subject to the approval of the Administrator, may be used.

* * * * *

10.1.1 * * *

Note: Do not use a Type S pitot tube assembly that is constructed such that the impact pressure opening plane of the pitot tube is below the entry plane of the nozzle (see Figure 2-7B).

* * * * *

10.4 Barometer. Calibrate the barometer used against a mercury barometer or NIST-traceable barometer prior to each field test.

* * * * *

12.1 Nomenclature

* * * * *

$T_{s(avg)}$ = Average absolute stack temperature, $^{\circ}K$ ($^{\circ}R$).
 $= 273 + T_s$ for metric units,
 $= 460 + T_s$ for English units.

* * * * *

12.6 Average Stack Gas Velocity.

$$V_s = K_p C_p \left[\frac{\sum_{i=1}^n \sqrt{\Delta p_i}}{n} \right] \sqrt{\frac{T_{s(avg)}}{P_s M_s}} \quad \text{Eq. 2-7}$$

Where:

$$K_p = 34.97 \frac{m}{\text{sec}} \left[\frac{(g/g - \text{mole})(\text{mm Hg})}{(^{\circ}K)(\text{mm H}_2\text{O})} \right]^{1/2} \quad \text{Metric}$$

$$= 85.49 \frac{ft}{\text{sec}} \left[\frac{(\text{lb/lb - mole})(\text{in. Hg})}{(^{\circ}R)(\text{in. H}_2\text{O})} \right]^{1/2} \quad \text{English}$$

12.7 Average Stack Gas Dry Volumetric Flow Rate.

$$Q = 3600(1 - B_{ws})v_s A \left[\frac{T_{std}P_s}{T_{s(avg)}P_{std}} \right] \quad \text{Eq. 2-8}$$

* * * * *

Method 2A—Direct Measurement of Gas Volume Through Pipes and Small Ducts

* * * * *

10.3 Barometer. Calibrate the barometer used against a mercury barometer or NIST-traceable barometer prior to the field test.

* * * * *

12.2 Test Meter Calibration Coefficient.

$$Y_m = \frac{(V_{rf} - V_{ri})P_b T_{m(abs)}}{(V_{mf} - V_{mi})(P_b + P_g)T_{r(abs)}} \quad \text{Eq. 2A-1}$$

* * * * *

Method 2B—Determination of Exhaust Gas Volume Flow Rate From Gasoline Vapor Incinerators

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12.1 Nomenclature.

CO_e = Mean carbon monoxide concentration in system exhaust, ppm.

$(CO_2)_a$ = Ambient carbon dioxide concentration, ppm (if not measured during the test period, may be assumed to equal 380 ppm).

$(CO_2)_e$ = Mean carbon dioxide concentration in system exhaust, ppm.

HC_e = Mean organic concentration in system exhaust as defined by the calibration gas, ppm.

HC_i = Mean organic concentration in system inlet as defined by the calibration gas, ppm.

K_e = Hydrocarbon calibration gas factor for the exhaust hydrocarbon analyzer, unitless [equal to the number of carbon atoms per molecule of the gas used to calibrate the analyzer (2 for ethane, 3 for propane, etc.)].

K_i = Hydrocarbon calibration gas factor for the inlet hydrocarbon analyzer, unitless.

V_{es} = Exhaust gas volume, m^3 .

V_{is} = Inlet gas volume, m^3 .

Q_{es} = Exhaust gas volume flow rate, m^3/min .

Q_{is} = Inlet gas volume flow rate, m^3/min .

θ = Sample run time, min.

S = Standard conditions: $20^{\circ}C$, 760 mm Hg.

* * * * *

Method 2D—Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

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10.4 Barometer. Calibrate the barometer used against a mercury barometer or NIST-traceable barometer prior to the field test.

* * * * *

■ 23. Amend appendix A-2 to part 60 as follows:

■ a. By revising Method 3A, section 7.1.

■ b. By amending Method 3C as follows:

■ i. By revising section 7.1.

■ ii. By adding section 7.3.

Appendix A-2 to Part 60—Test Methods 2G Through 3C

* * * * *

Method 3A—Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)

* * * * *

7.1 Calibration Gas. *What calibration gases do I need?* Refer to Section 7.1 of Method 7E for the calibration gas requirements. Example calibration gas mixtures are listed below. Pre-cleaned or scrubbed air may be used for the O₂ high-calibration gas provided it does not contain

other gases that interfere with the O₂ measurement.

(a) CO₂ in Nitrogen (N₂).

(b) CO₂/SO₂ gas mixture in N₂.

(c) O₂/SO₂ gas mixture in N₂.

(d) O₂/CO₂/SO₂ gas mixture in N₂.

(e) CO₂/NO_x gas mixture in N₂.

(f) CO₂/SO₂/NO_x gas mixture in N₂.

The tests for analyzer calibration error and system bias require high-, mid-, and low-level gases.

* * * * *

Method 3C—Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources

* * * * *

7.1 Nomenclature.

B_w = Moisture content in the sample, fraction.

C_{N2} = Measured N₂ concentration (by Method 3C), fraction.

C_{N2Corr} = Measured N₂ concentration corrected only for dilution, fraction.

C_t = Calculated NMOC concentration, ppmv C equivalent.

C_{tm} = Measured NMOC concentration, ppmv C equivalent.

P_b = Barometric pressure, mm Hg.

P_t = Gas sample tank pressure after sampling, but before pressurizing, mm Hg absolute.

P_{tf} = Final gas sample tank pressure after pressurizing, mm Hg absolute.

P_{ti} = Gas sample tank pressure after evacuation, mm Hg absolute.

P_w = Vapor pressure of H₂O (from Table 25C-1), mm Hg.

r = Total number of analyzer injections of sample tank during analysis (where j = injection number, 1 . . . r).

R = Mean calibration response factor for specific sample component, area/ppm.

T_t = Sample tank temperature at completion of sampling, °K.

T_{ti} = Sample tank temperature before sampling, °K.

T_{tf} = Sample tank temperature after pressurizing, °K.

* * * * *

7.3 Measured N₂ Concentration Correction. Calculate the reported N₂ correction for Method 25-C using Eq. 3C-4. If oxygen is determined in place of N₂, substitute the oxygen concentration for the nitrogen concentration in the equation.

$$C_{N_2, \text{Corr}} = \frac{\frac{P_{tf}}{T_{tf}}}{\frac{P_t}{T_t} - \frac{P_{ti}}{T_{ti}}} (C_{N_2}) \quad \text{Eq. 3C-4}$$

* * * * *

■ 24. Amend appendix A-3 to part 60 as follows:

■ a. By revising Method 4, sections 9.1 and 16.0.

■ b. Amend Method 5 as follows:

■ i. By revising sections 6.1.1.5, 6.1.1.6, 6.1.1.7, 6.1.1.9, 7.1.3, 8.1, 8.3.4, 8.5, 8.5.6, 8.7.3, 8.7.5, 10.3.3, 10.5, 10.6.

■ ii. By removing section 7.1.5.

■ iii. By revising Equation 5-13 in section 16.2.3.3.

■ iv. By adding section 16.3.

■ v. By adding reference 13 to section 17.0.

■ c. By revising Method 5A, section 8.1.

■ d. By amending Method 5E as follows:

■ i. By redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively.

■ ii. By adding a new section 16.0.

■ e. By amending Method 5H as follows:

■ i. By revising section 12.1.

■ ii. By adding section 12.15.

■ iii. By redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively.

■ iv. By adding a new section 16.

Appendix A-3 to Part 60—Test Methods 4 Through 5I

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Method 4—Determination of Moisture Content in Stack Gases

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9.1 Miscellaneous Quality Control Measures.

Section	Quality control measure	Effect
Section 8.1.1.4	Leak rate of the sampling system cannot exceed four percent of the average sampling rate or 0.00057 m ³ /min (0.020 cfm).	Ensures the accuracy of the volume of gas sampled. (Reference Method).
Section 8.2.1	Leak rate of the sampling system cannot exceed two percent of the average sampling rate.	Ensures the accuracy of the volume of gas sampled. (Approximation Method).

* * * * *

16.0 Alternative Procedures

16.1 The procedure described in Method 5 for determining moisture content is an acceptable alternative to Method 4.

16.2 The procedures in Method 6A for determining moisture is an acceptable alternative to Method 4.

16.3 Method 320 is an acceptable alternative to Method 4 for determining moisture.

16.4 Using F-factors to determine moisture is an acceptable alternative to Method 4 for a combustion stack not using a scrubber. If this option is selected, calculate the moisture content as follows:

$$B_{ws} = B_H + B_A + B_F$$

Where:

B_A = Mole fraction of moisture in the ambient air.

$$B_A = \frac{\%RH}{100 P_{bar} \left[10^{\left(\frac{5.6912}{T + 350.83} \right)} \right]}$$

B_F = Mole fraction of moisture from free water in the fuel.

$$B_F = \left[\frac{0.0036 W^2 + 0.075 W}{100} \right] \left[\frac{20.9 - O_2}{20.9} \right]$$

B_H = Mole fraction of moisture from the hydrogen in the fuel.

$$B_H = \left(1 - \frac{F_d}{F_w} \right) \frac{(20.9 - O_2)}{20.9}$$

B_{ws} = Mole fraction of moisture in the stack gas.

F_d = Volume of dry combustion components per unit of heat content at 0 percent oxygen, dscf/10⁶ Btu (scm/J). See Table 19-2 in Method 19.

F_w = Volume of wet combustion components per unit of heat content at 0 percent oxygen, wet scf/10⁶ Btu (scm/J). See Table 19-2 in Method 19.

%RH = Percent relative humidity (calibrated hydrometer acceptable), percent.

P_{bar} = Barometric pressure, in. Hg.

T = Ambient temperature, °F.

W = Percent free water by weight, percent.

O_2 = Percent oxygen in stack gas, dry basis, percent.

* * * * *

Method 5—Determination of Particulate Matter Emissions From Stationary Sources

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6.1.1.5 Filter Holder. Borosilicate glass, with a glass or Teflon frit filter support and a silicone rubber gasket. Other materials of construction (e.g., stainless steel or Viton) may be used, subject to the approval of the Administrator. The holder design shall provide a positive seal against leakage from the outside or around the filter. The holder shall be attached immediately at the outlet of the probe (or cyclone, if used).

6.1.1.6 Filter Heating System. Any heating system capable of monitoring and maintaining temperature around the filter shall be used to ensure the sample gas temperature exiting the filter of 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.

The monitoring and regulation of the temperature around the filter may be done with the filter temperature sensor or another temperature sensor.

6.1.1.7 Filter Temperature Sensor. A temperature sensor capable of measuring temperature to within ±3 °C (5.4 °F) shall be installed so that the sensing tip of the temperature sensor is in direct contact with the sample gas exiting the filter. The sensing tip of the sensor may be encased in glass, Teflon, or metal and must protrude at least ½ in. into the sample gas exiting the filter. The filter temperature sensor must be monitored and recorded during sampling to ensure a sample gas temperature exiting the filter of 120 ± 14 °C (248 ± 25 °F), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application.

* * * * *

6.1.1.9 Metering System. Vacuum gauge, leak-free pump, calibrated temperature sensors (rechecked at at least one point after each test), dry gas meter (DGM) capable of measuring volume to within 2 percent, and related equipment, as shown in Figure 5-1. Alternatively, an Isostack metering system may be used if all Method 5 calibrations are performed, with the exception of those related to ΔH@ in Section 9.2.1, wherein the sample flow rate system shall be calibrated in lieu of ΔH@ and shall not deviate by more than 5 percent. Other metering systems capable of maintaining sampling rates within 10 percent of isokinetic and of determining sample volumes to within 2 percent may be used, subject to the approval of the Administrator. When the metering system is used in conjunction with a pitot tube, the

system shall allow periodic checks of isokinetic rates.

* * * * *

7.1.3 Water. When analysis of the material caught in the impingers is required, deionized distilled water [to conform to ASTM D1193-77 or 91 Type 3 (incorporated by reference—see § 60.17)] with at least <0.001 percent residue shall be used or as specified in the applicable method requiring analysis of the water. Run reagent blanks prior to field use to eliminate a high blank on test samples.

* * * * *

8.1 Pretest Preparation. It is suggested that sampling equipment be maintained according to the procedures described in APTD-0576. Alternative mercury-free thermometers may be used if the thermometers are at a minimum equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

8.3.4 Set up the train as shown in Figure 5-1 ensuring that the connections are leak-tight. Subject to the approval of the Administrator, a glass cyclone may be used between the probe and filter holder when the total particulate catch is expected to exceed 100 mg or when water droplets are present in the stack gas.

* * * * *

8.5 Sampling Train Operation. During the sampling run, maintain an isokinetic sampling rate (within 10 percent of true isokinetic unless otherwise specified by the Administrator) and a sample gas temperature through the filter of 120 ± 14 °C (248 ± 25 °F) or such other temperature as specified by

an applicable subpart of the standards or approved by the Administrator.

* * * * *

8.5.6 During the test run, make periodic adjustments to keep the temperature around the filter holder at the proper level to maintain the sample gas temperature exiting the filter; add more ice and, if necessary, salt to maintain a temperature of less than 20 °C (68 °F) at the condenser/silica gel outlet. Also, periodically check the level and zero of the manometer.

* * * * *

8.7.3 Before moving the sample train to the cleanup site, remove the probe from the sample train and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Cap the filter inlet where the probe was fastened. Remove the umbilical cord from the last impinger, and cap the impinger. If a flexible line is used between the first impinger or condenser and the filter holder, disconnect the line at the filter holder, and let any condensed water or liquid drain into the impingers or condenser. Cap off the filter holder outlet and impinger inlet. Either ground-glass stoppers, plastic

caps, or serum caps may be used to close these openings.

* * * * *

8.7.5 Save a portion of the acetone used for cleanup as a blank. From each storage container of acetone used for cleanup, save 200 ml and place in a glass sample container labeled "acetone blank." To minimize any particulate contamination, rinse the wash bottle prior to filling from the tested container.

* * * * *

10.3.3 Acceptable Variation in Calibration Check. If the DGM coefficient values obtained before and after a test series differ by more than 5 percent, the test series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (*i.e.*, before or after) gives the lower value of total sample volume.

* * * * *

10.5 Temperature Sensors. Use the procedure in Section 10.3 of Method 2 to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An

alternative mercury-free NIST-traceable thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application. As an alternative, the following single-point calibration procedure may be used. After each test run series, check the accuracy (and, hence, the calibration) of each thermocouple system at ambient temperature, or any other temperature, within the range specified by the manufacturer, using a reference thermometer (either ASTM reference thermometer or a thermometer that has been calibrated against an ASTM reference thermometer). The temperatures of the thermocouple and reference thermometers shall agree to within ± 2 °F.

10.6 Barometer. Calibrate against a mercury barometer or NIST-traceable barometer prior to the field test. Alternatively, barometric pressure may be obtained from a weather report that has been adjusted for the test point (on the stack) elevation.

* * * * *

16.2.3.3 * * *

$$V_{cr(std)} = K \cdot \frac{P_{bar} \theta}{\sqrt{T_{amb}}} \quad \text{Eq. 5-13}$$

* * * * *

16.3 Alternative Post-Test Metering System Calibration. The following procedure may be used as an alternative to the post-test calibration described in Section 10.3.2. This alternative procedure does not detect leakages between the inlet of the metering system and the dry gas meter. Therefore, two steps must be included to make it an equivalent alternative:

(1) The metering system must pass the post-test leak-check from either the inlet of the sampling train or the inlet of the metering system. Therefore, if the train fails the former leak-check, another leak-check from the inlet of the metering system must be conducted;

(2) The metering system must pass the leak-check of that portion of the train from the pump to the orifice meter as described in Section 8.4.1.

16.3.1 After each test run, do the following:

16.3.1.1 Ensure that the metering system has passed the post-test leak-check. If not, conduct a leak-check of the metering system from its inlet.

16.3.1.2 Conduct the leak-check of that portion of the train from the pump to the orifice meter as described in Section 10.3.1.1.

16.3.1.3 Calculate Y_{qa} for each test run using the following equation:

$$Y_{qa} = \frac{\theta}{V_m} \sqrt{\frac{0.0319 T_m}{\Delta H \odot \left(P_{bar} + \frac{\Delta H_{avg}}{13.6} \right) \left(\frac{29}{M_a} \right) (\sqrt{\Delta H})_{avg}}} \quad \text{Eq. 5-15}$$

Where:

Y_{qa} = Dry gas meter calibration check value, dimensionless.

$0.0319 = (29.92/528) (0.75)^2$ (in. Hg/°R) cfm².

$\Delta H \odot$ = Orifice meter calibration coefficient, in. H₂O.

M_a = Dry molecular weight of stack gas, lb/lb-mole.

29 = Dry molecular weight of air, lb/lb-mole.

16.3.2 After each test run series, do the following:

16.3.2.1 Average the three or more Y_{qa} 's obtained from the test run series and compare this average Y_{qa} with the dry gas meter calibration factor Y . The average Y_{qa} must be within 5 percent of Y .

16.3.2.2 If the average Y_{qa} does not meet the 5 percent criterion, recalibrate the meter over the full range of orifice settings as detailed in Section 10.3.1. Then follow the procedure in Section 10.3.3.

17.0 * * *

13. Shigehara, Roger T., P.G. Royals, and E.W. Steward. "Alternative Method 5 Post-Test Calibration." Entropy Incorporated, Research Triangle Park, NC 27709.

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Method 5A—Determination of Particulate Matter Emissions From the Asphalt Processing and Asphalt Roofing Industry

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8.1 Pretest Preparation. Unless otherwise specified, maintain and calibrate all components according to the procedure described in APTD-0576, "Maintenance, Calibration, and Operation of Isokinetic Source-Sampling Equipment" (Reference 3 in Method 5, Section 17.0). Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

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Method 5E—Determination of Particulate Matter Emissions From the Wool Fiberglass Insulation Manufacturing Industry

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16.0 Alternative Procedures

16.1 Total Organic Carbon Analyzer. Tekmar-Dohrmann analyzers using the single injection technique may be used as an alternative to Rosemount Model 2100A analyzers.

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Method 5H—Determination of Particulate Matter Emissions From Wood Heaters From a Stack Location

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12.1 Nomenclature.

A = Sample flow rate adjustment factor.
BR = Dry wood burn rate, kg/hr (lb/hr), from Method 28, Section 8.3.
 B_{ws} = Water vapor in the gas stream, proportion by volume.
 C_i = Tracer gas concentration at inlet, ppmv.
 C_o = Tracer gas concentration at outlet, ppmv.
 C_s = Concentration of particulate matter in stack gas, dry basis, corrected to standard conditions, g/dscm (g/dscf).
E = Particulate emission rate, g/hr (lb/hr).
 ΔH = Average pressure differential across the orifice meter (see Figure 5H-1), mm H₂O (in. H₂O).
 L_a = Maximum acceptable leakage rate for either a post-test leak-check or for a leak-check following a component change; equal to 0.00057 cmm (0.020 cfm) or 4 percent of the average sampling rate, whichever is less.
 L_1 = Individual leakage rate observed during the leak-check conducted before a component change, cmm (cfm).
 L_p = Leakage rate observed during the post-test leak-check, cmm (cfm).
 m_a = Total amount of particulate matter collected, mg.
 M_a = Mass of residue of solvent after evaporation, mg.
 N_C = Grams of carbon/gram of dry fuel (lb/lb), equal to 0.0425.
 N_T = Total dry moles of exhaust gas/kg of dry wood burned, g-moles/kg (lb-moles/lb).
PR = Percent of proportional sampling rate.
 P_{bar} = Barometric pressure at the sampling site, mm Hg (in.Hg).
 P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in.Hg).
 Q_i = Gas volumetric flow rate at inlet, cfm (l/min).
 Q_o = Gas volumetric flow rate at outlet, cfm (l/min).

* * * * *

12.15 Alternative Tracer Gas Flow Rate Determination.

$$Q_o = \frac{Q_i \times C_i}{C_o} \quad \text{Eq. 5H-10}$$

Note: This gives Q for a single instance only. Repeated multiple determinations are needed to track temporal variations. Very small variations in Q_i , C_i , or C_o may give very large variations in Q_o .

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16.0 Alternative Procedures

16.1 Alternative Stack Gas Volumetric Flow Rate Determination (Tracer Gas).

16.1.1 Apparatus.

16.1.1.1 Tracer Gas Injector System. This is to inject a known concentration of tracer gas into the stack. This system consists of a cylinder of tracer gas, a gas cylinder regulator, a stainless steel needle valve or a flow controller, a nonreactive (stainless steel or glass) rotameter, and an injection loop to disperse the tracer gas evenly in the stack.

16.1.1.2 Tracer Gas Probe. A glass or stainless steel sampling probe.

16.1.1.3 Gas Conditioning System. A gas conditioning system is suitable for delivering a cleaned sample to the analyzer consisting of a filter to remove particulate and a condenser capable of lowering the dew point of the sample gas to less than 5 °C (40 °F). A desiccant such as anhydrous calcium sulfate may be used to dry the sample gas. Desiccants which react or absorb tracer gas or stack gas may not be used, e.g. silica gel absorbs CO₂.

16.1.1.4 Pump. An inert (i.e., stainless steel or Teflon head) pump to deliver more than the total sample required by the manufacturer's specifications for the analyzer used to measure the downstream tracer gas concentration.

16.1.1.5 Gas Analyzer. A gas analyzer is any analyzer capable of measuring the tracer gas concentration in the range necessary at least every 10 minutes. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate shall be provided unless data is provided to show that the analyzer is insensitive to flow variations over the range encountered during the test. The gas analyzer needs to meet or exceed the following performance specifications:

Linearity	±1 percent of full scale.
Calibration Error.	≤2 percent of span.
Response Time	≤10 seconds.
Zero Drift (24 hour).	≤2 percent of full scale.
Span Drift (24 hour).	≤2 percent of full scale.
Resolution	≤0.5 percent of span.

16.1.1.6 Recorder (optional). To provide a permanent record of the analyzer output.

16.1.2 Reagents.

16.1.2.1 Tracer Gas. The tracer gas is sulfur hexafluoride in an appropriate concentration for accurate analyzer measurement or pure sulfur dioxide. The gas used must be nonreactive with the stack effluent and give minimal (<3 percent) interference to measurement by the gas analyzer.

16.1.3 Procedure. Select upstream and downstream locations in the stack or duct for introducing the tracer gas and delivering the sampled gas to the analyzer. The inlet location should be 8 or more duct diameters beyond any upstream flow disturbance. The outlet should be 8 or more undisturbed duct diameters from the inlet and 2 or more duct diameters from the duct exit. After installing the apparatus, meter a known concentration of the tracer gas into the stack at the inlet

location. Use the gas sample probe and analyzer to show that no stratification of the tracer gas is found in the stack at the measurement locations. Monitor the tracer gas concentration from the outlet location and record the concentration at 10-minute intervals or more often at the option of the tester. A minimum of three measured intervals is recommended to determine the stack gas volumetric flow rate. Other statistical procedures may be applied for complete flow characterization and additional QA/QC.

* * * * *

- 25. Amend appendix A-4 to part 60 as follows:
- a. By revising Method 6, sections 10.2 and 10.4.
- b. By revising Method 6C, sections 4.0 and 8.3.
- c. By revising Method 7, sections 4.0, 10.2, and 10.3.
- d. By revising Method 7A, sections 4.0 and 10.4.
- e. By revising Method 7E, sections 6.1, 7.1.1, the introductory text in section 8.2.5, the introductory text in section 8.2.7, and the introductory text in section 16.2.2.
- f. By revising Method 8, the definition for V_{soln} in section 12.1, and Figure 8-1 in section 17.0.
- g. By revising Method 10, sections 6.2.5 and 8.4.2.
- h. By revising Method 10A, sections 2.0, 8.2.1, 8.2.3, 11.1, 11.2, the introductory text in section 12.3, and 13.5.
- i. By revising Method 10B, section 2.1, 6.2.3, the introductory text in section 12.2.

Appendix A-4 to Part 60—Test Methods 6 Through 10B

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Method 6—Determination of Sulfur Dioxide Emissions From Stationary Sources

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10.2 Temperature Sensors. Calibrate against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

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10.4 Barometer. Calibrate against a mercury barometer or NIST-traceable barometer prior to the field test.

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Method 6C—Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure)

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4.0 Interferences

Refer to Section 4.0 of Method 7E.

* * * * *

8.3 Interference Check. You must follow the procedures of Section 8.2.7 of Method 7E

to conduct an interference check, substituting SO₂ for NO_x as the method pollutant. For dilution-type measurement systems, you must use the alternative interference check procedure in Section 16 and a co-located, unmodified Method 6 sampling train. Quenching in fluorescence analyzers must be evaluated and remedied unless a dilution system and ambient-level analyzer is used. This may be done by preparing the calibration gas to contain within 1 percent of the absolute oxygen and carbon dioxide content of the measured gas, preparing the calibration gas in air and using vendor nomographs, or by other acceptable means.

Method 7—Determination of Nitrogen Oxide Emissions From Stationary Sources

4.0 Interferences

Biased results have been observed when sampling under conditions of high sulfur dioxide concentrations. At or above 2100 ppm SO₂, use five times the H₂O₂ concentration of the Method 7 absorbing solution. Laboratory tests have shown that high concentrations of SO₂ (about 2100 ppm) cause low results in Method 7 and 7A. Increasing the H₂O₂ concentration to five times the original concentration eliminates this bias. However, when no SO₂ is present, increasing the concentration by five times results in a low bias.

10.2 Barometer. Calibrate against a mercury barometer or NIST-traceable barometer prior to the field test.

10.3 Temperature Gauge. Calibrate dial thermometers against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

Method 7A—Determination of Nitrogen Oxide Emissions From Stationary Sources (Ion Chromatographic Method)

4.0 Interferences

Biased results have been observed when sampling under conditions of high sulfur dioxide concentrations. At or above 2100 ppm SO₂, use five times the H₂O₂ concentration of the Method 7 absorbing solution. Laboratory tests have shown that high concentrations of SO₂ (about 2100 ppm) cause low results in Method 7 and 7A. Increasing the H₂O₂ concentration to five times the original concentration eliminates

this bias. However, when no SO₂ is present, increasing the concentration by five times results in a low bias.

10.4 Temperature Gauge. Calibrate dial thermometers against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

Method 7E—Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure)

6.1 What do I need for the measurement system? You may use any equipment and supplies meeting the following specifications:

(1) Sampling system components that are not evaluated in the system bias or system calibration error test must be glass, Teflon, or stainless steel. Other materials are potentially acceptable, subject to approval by the Administrator.

(2) The interference, calibration error, and system bias criteria must be met.

(3) Sample flow rate must be maintained within 10 percent of the flow rate at which the system response time was measured.

(4) All system components (excluding sample conditioning components, if used) must maintain the sample temperature above the moisture dew point. Ensure minimal contact between any condensate and the sample gas. Section 6.2 provides example equipment specifications for a NO_x measurement system. Figure 7E-1 is a diagram of an example dry-basis measurement system that is likely to meet the method requirements and is provided as guidance. For wet-basis systems, you may use alternative equipment and supplies as needed (some of which are described in Section 6.2), provided that the measurement system meets the applicable performance specifications of this method.

7.1.1 High-Level Gas. This concentration is chosen to set the calibration span as defined in Section 3.4.

8.2.5 Initial System Bias and System Calibration Error Checks. Before sampling begins, determine whether the high-level or mid-level calibration gas best approximates the emissions and use it as the upscale gas. Introduce the upscale gas at the probe upstream of all sample conditioning components in system calibration mode. Record the time it takes for the measured concentration to increase to a value that is at

least 95 percent or within 0.5 ppm (whichever is less restrictive) of a stable response for both the low-level and upscale gases. Continue to observe the gas concentration reading until it has reached a final, stable value. Record this value on a form similar to Table 7E-2.

8.2.7 Interference Check. Conduct an interference response test of the gas analyzer prior to its initial use in the field. If you have multiple analyzers of the same make and model, you need only perform this alternative interference check on one analyzer. You may also meet the interference check requirement if the instrument manufacturer performs this or a similar check on an analyzer of the same make and model of analyzer that you use and provides you with documented results. Analytical quenching must be evaluated and remedied unless a dilution system and ambient-level analyzer are used. The analyzer must be checked for quenching at concentrations of approximately 4 and 12 percent CO₂ at a mid-range concentration for each analyzer range which is commonly used. The analyzer must be rechecked after it has been repaired or modified or on another periodic basis.

16.2.2 Bag Procedure. Perform the analyzer calibration error test to document the calibration (both NO and NO_x modes, as applicable). Fill a Tedlar or equivalent bag approximately half full with either ambient air, pure oxygen, or an oxygen standard gas with at least 19.5 percent by volume oxygen content. Fill the remainder of the bag with mid- to high-level NO in N₂ (or other appropriate concentration) calibration gas. (Note that the concentration of the NO standard should be sufficiently high enough for the diluted concentration to be easily and accurately measured on the scale used. The size of the bag should be large enough to accommodate the procedure and time required. Verify through the manufacturer that the Tedlar alternative is suitable for NO and make this verified information available for inspection.)

Method 8—Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions From Stationary Sources

12.1

V_{soln} = Total volume of solution in which the sample is contained, 1000 ml for the SO₂ sample and 250 ml for the H₂SO₄ sample.

17.0 Tables, Diagrams, Flowcharts, and Validation Data

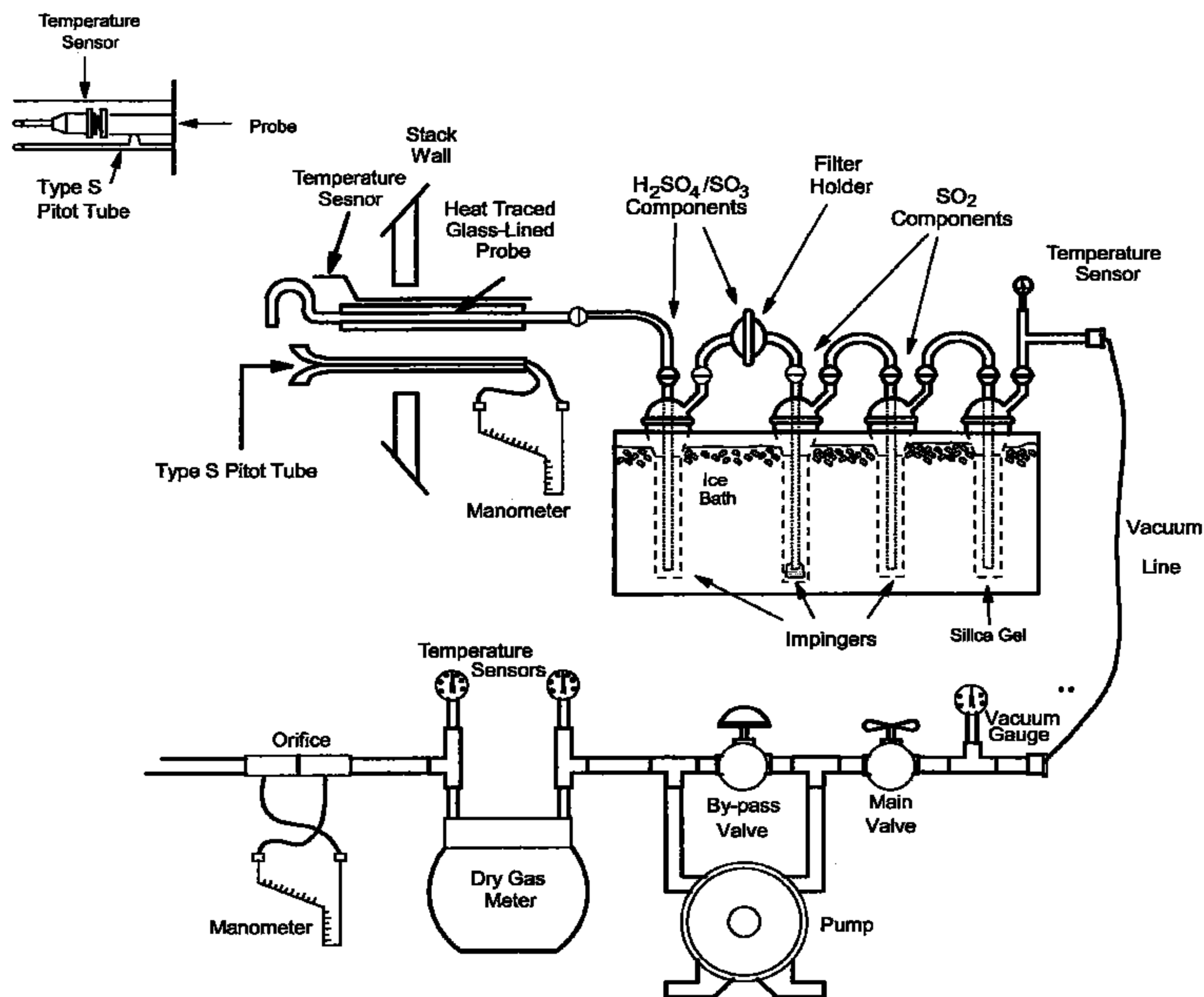


Figure 8-1. Sulfuric Acid Sampling Train

* * * * *

Method 10—Determination of Carbon Monoxide Emissions From Stationary Sources

* * * * *

6.2.5 Flexible Bag, Tedlar, or equivalent, with a capacity of 60 to 90 liters (2 to 3 ft³). (Verify through the manufacturer that the Tedlar alternative is suitable for CO and make this verified information available for inspection.) Leak-test the bag in the laboratory before using by evacuating with a pump followed by a dry gas meter. When the evacuation is complete, there should be no flow through the meter. Gas tanks may be used in place of bags if the samples are analyzed within one week.

8.4.2 Integrated Sampling. Evacuate the flexible bag. Set up the equipment as shown in Figure 10-1 with the bag disconnected. Place the probe in the stack and purge the sampling line. Connect the bag, making sure

that all connections are leak-free. Sample at a rate proportional to the stack velocity. If needed, the CO₂ content of the gas may be determined by using the Method 3 integrated sample procedures, or by weighing an ascarite CO₂ removal tube used and computing CO₂ concentration from the gas volume sampled and the weight gain of the tube. Data may be recorded on a form similar to Table 10-1. If a tank is used for sample collection, follow procedures similar to those in Sections 8.1.2, 8.2.3, 8.3, and 12.4 of Method 25 as appropriate to prepare the tank, conduct the sampling, and correct the measured sample concentration.

* * * * *

Method 10A—Determination of Carbon Monoxide Emissions in Certifying Continuous Emission Monitoring Systems at Petroleum Refineries

* * * * *

2.0 Summary of Method

An integrated gas sample is extracted from the stack, passed through an alkaline permanganate solution to remove sulfur oxides and nitrogen oxides, and collected in a Tedlar or equivalent bag. (Verify through the manufacturer that the Tedlar alternative is suitable for NO and make this verified information available for inspection.) The CO concentration in the sample is measured spectrophotometrically using the reaction of CO with *p*-sulfaminobenzoic acid.

8.2.1 Evacuate the bag completely using a vacuum pump. Assemble the apparatus as shown in Figure 10A-1. Loosely pack glass wool in the tip of the probe. Place 400 ml of alkaline permanganate solution in the first two impingers and 250 ml in the third. Connect the pump to the third impinger, and follow this with the surge tank, rate meter,

and 3-way valve. Do not connect the bag to the system at this time.

* * * * *

8.2.3 Purge the system with sample gas by inserting the probe into the stack and drawing the sample gas through the system at 300 ml/min $\pm$ 10 percent for 5 minutes. Connect the evacuated bag to the system, record the starting time, and sample at a rate of 300 ml/min for 30 minutes, or until the bag is nearly full. Record the sampling time, the barometric pressure, and the ambient temperature. Purge the system as described above immediately before each sample.

* * * * *

11.1 Assemble the system shown in Figure 10A-3, and record the information required in Table 10A-1 as it is obtained. Pipet 10.0 ml of the colorimetric reagent into each gas reaction bulb, and attach the bulbs to the system. Open the stopcocks to the reaction bulbs, but leave the valve to the bag closed. Turn on the pump, fully open the coarse-adjust flow valve, and slowly open the fine-adjust valve until the pressure is reduced to at least 40 mm Hg. Now close the coarse adjust valve, and observe the manometer to be certain that the system is leak-free. Wait a minimum of 2 minutes. If the pressure has increased less than 1 mm Hg, proceed as described below. If a leak is present, find and correct it before proceeding further.

11.2 Record the vacuum pressure (P_v) to the nearest 1 mm Hg, and close the reaction bulb stopcocks. Open the bag valve, and allow the system to come to atmospheric pressure. Close the bag valve, open the pump coarse adjust valve, and evacuate the system again. Repeat this fill/evacuation procedure at least twice to flush the manifold completely. Close the pump coarse adjust valve, open the bag valve, and let the system fill to atmospheric pressure. Open the stopcocks to the reaction bulbs, and let the entire system come to atmospheric pressure. Close the bulb stopcocks, remove the bulbs, record the room temperature and barometric pressure (P_{bar} , to nearest mm Hg), and place the bulbs on the shaker table with their main axis either parallel to or perpendicular to the plane of the table top. Purge the bulb-filling system with ambient air for several minutes between samples. Shake the samples for exactly 2 hours.

* * * * *

12.3 CO Concentration in the Bag. Calculate C_b using Equations 10A-2 and 10A-3. If condensate is visible in the bag, calculate B_w using Table 10A-2 and the temperature and barometric pressure in the analysis room. If condensate is not visible, calculate B_w using the temperature and barometric pressure at the sampling site.

* * * * *

13.5 Stability. The individual components of the colorimetric reagent are stable for at least one month. The colorimetric reagent must be used within two days after preparation to avoid excessive blank correction. The samples in the bag should be stable for at least one week if the bags are leak-free.

* * * * *

Method 10B—Determination of Carbon Monoxide Emissions From Stationary Sources

* * * * *

2.1 An integrated gas sample is extracted from the sampling point, passed through a conditioning system to remove interferences, and collected in a Tedlar or equivalent bag. (Verify through the manufacturer that the Tedlar alternative is suitable for NO and make this verifying information available for inspection.) The CO is separated from the sample by gas chromatography (GC) and catalytically reduced to methane (CH_4) which is determined by flame ionization detection (FID). The analytical portion of this method is identical to applicable sections in Method 25 detailing CO measurement.

* * * * *

6.2.3 Sample Injection System. Same as in Method 25, Section 6.3.1.4, equipped to accept a sample line from the bag.

* * * * *

12.2 CO Concentration in the Bag. Calculate C_b using Equations 10B-1 and 10B-2. If condensate is visible in the bag, calculate B_w using Table 10A-2 of Method 10A and the temperature and barometric pressure in the analysis room. If condensate is not visible, calculate B_w using the temperature and barometric pressure at the sampling site.

* * * * *

■ 26. Amend appendix A-5 to part 60 as follows:

■ a. By revising Method 11, sections 8.5 and 10.1.2.

■ b. Amend Method 12 as follows:

■ i. By revising section 16.1.

■ ii. By adding sections 16.4, 16.5, and 16.6.

■ c. By adding a sentence to the end of Method 14A, section 10.1.1.

Appendix A-5 to Part 60—Test Methods 11 Through 15A

* * * * *

Method 11—Determination of Hydrogen Sulfide Content of Fuel Gas Streams in Petroleum Refineries

* * * * *

8.5 Sample for at least 10 minutes. At the end of the sampling time, close the sampling valve, and record the final volume and temperature readings. Conduct a leak-check as described in Section 8.2. A yellow color in the final cadmium sulfate impinger indicates depletion of the absorbing solution. An additional cadmium sulfate impinger should be added for subsequent samples and the sample with yellow color in the final impinger should be voided.

* * * * *

10.1.2 Temperature Sensors. Calibrate against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is at a minimum equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

Method 12—Determination of Inorganic Lead Emissions From Stationary Sources

* * * * *

16.1 Simultaneous Determination of Particulate Matter and Lead Emissions. Method 12 may be used to simultaneously determine Pb provided:

(1) Acetone is used to remove particulate from the probe and inside of the filter holder as specified by Method 5,

(2) 0.1 N HNO_3 is used in the impingers,

(3) A glass fiber filter with a low Pb background is used, and

(4) The entire train contents, including the impingers, are treated and analyzed for Pb as described in Sections 8.0 and 11.0 of this method.

* * * * *

16.4 Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) Analysis. ICP-AES may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.4.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP-AES application.

16.4.2 The limit of quantitation for the ICP-AES must be demonstrated, and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP-AES offers detection limits comparable to cold vapor atomic absorption.

16.5 Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Analysis. ICP-MS may be used as an alternative to atomic absorption analysis.

16.6 Cold Vapor Atomic Fluorescence Spectrometry (CVAFS) Analysis. CVAFS may be used as an alternative to atomic absorption analysis.

* * * * *

Method 14A—Determination of Total Fluoride Emissions From Selected Sources at Primary Aluminum Production Facilities

* * * * *

10.1.1 * * * Allowable tolerances for Y and $\Delta H@$ are given in Figure 5-5 of Method 5 of this appendix.

* * * * *

■ 27. Amend appendix A-6 to part 60 as follows:

■ a. By revising Method 16A, section 1.2.

■ b. By revising Method 16C, sections 12.1 and 12.5.

■ c. By revising Method 18, sections 8.2.1.1.2, 8.2.1.4, 8.2.1.4.2, 16.1.1.12, 16.1.3.2, and the headings of figures 18-3 and 18-10.

■ d. By redesignating section 8.2.1.5.2.3 as section 8.2.1.5.2.2.

■ e. By adding a new section 8.2.1.5.2.3.

Appendix A-6 to Part 60—Test Methods 16 Through 18

Method 16A—Determination of Total Reduced Sulfur Emissions From Stationary Sources (Impinger Technique)

1.2 Applicability. This method is applicable for the determination of TRS emissions from recovery boilers, lime kilns, and smelt dissolving tanks at kraft pulp mills, reduced sulfur compounds (H_2S , carbonyl sulfide, and carbon disulfide) from sulfur recovery units at onshore natural gas processing facilities, and from other sources when specified in an applicable subpart of the regulations. The flue gas must contain at least 1 percent oxygen for complete oxidation of all TRS to SO_2 . Note: If sources other than kraft pulp mills experience low oxygen levels in the emissions, the method results may be biased low.

Method 16C—Determination of Total Reduced Sulfur Emissions From Stationary Sources

12.1 Nomenclature.

ACE = Analyzer calibration error, percent of calibration span.

CD = Calibration drift, percent.

C_{Dir} = Measured concentration of a calibration gas (low, mid, or high) when introduced in direct calibration mode, ppmv.

C_{H_2S} = Concentration of the system performance check gas, ppmv H_2S .

C_S = Measured concentration of the system performance gas when introduced in system calibration mode, ppmv H_2S .

C_v = Manufacturer certified concentration of a calibration gas (low, mid, or high), ppmv SO_2 .

C_{SO_2} = Unadjusted sample SO_2 concentration, ppmv.

C_{TRS} = Total reduced sulfur concentration corrected for system performance, ppmv.

DF = Dilution system (if used) dilution factor, dimensionless.

SP = System performance, percent.

12.5 TRS Concentration as SO_2 . For each sample or test run, calculate the arithmetic average of SO_2 concentration values (e.g., 1-minute averages). Then calculate the sample TRS concentration by adjusting the average value of C_{SO_2} for system performance using Equation 16C-4.

$$C_{TRS} = \frac{C_{SO_2}}{1 - |SP|} \quad \text{Eq. 16C-4}$$

Method 18—Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

8.2.1.1.2 Sampling Procedure. To obtain a sample, assemble the sample train as shown in Figure 18-9. Leak-check both the bag and

the container. Connect the vacuum line from the needle valve to the Teflon sample line from the probe. Place the end of the probe at the centroid of the stack or at a point no closer to the walls than 1 in., and start the pump. Set the flow rate so that the final volume of the sample is approximately 80 percent of the bag capacity. After allowing sufficient time to purge the line several times, connect the vacuum line to the bag, and evacuate until the rotameter indicates no flow. Then position the sample and vacuum lines for sampling, and begin the actual sampling, keeping the rate proportional to the stack velocity. As a precaution, direct the gas exiting the rotameter away from sampling personnel. At the end of the sample period, shut off the pump, disconnect the sample line from the bag, and disconnect the vacuum line from the bag container. Record the source temperature, barometric pressure, ambient temperature, sampling flow rate, and initial and final sampling time on the data sheet shown in Figure 18-10. Protect the bag and its container from sunlight. Record the time lapsed between sample collection and analysis, and then conduct the recovery procedure in Section 8.4.2.

8.2.1.4 Other Modified Bag Sampling Procedures. In the event that condensation is observed in the bag while collecting the sample and a direct interface system cannot be used, heat the bag during collection and maintain it at a suitably elevated temperature during all subsequent operations. (Note: Take care to leak-check the system prior to the dilutions so as not to create a potentially explosive atmosphere.) As an alternative, collect the sample gas, and simultaneously dilute it in the bag.

8.2.1.4.2 Second Alternative Procedure. Prefill the bag with a known quantity of inert gas. Meter the inert gas into the bag according to the procedure for the preparation of gas concentration standards of volatile liquid materials (Section 10.1.2.2), but eliminate the midget impinger section. Take the partly filled bag to the source, and meter the source gas into the bag through heated sampling lines and a heated flowmeter, or Teflon positive displacement pump. Verify the dilution factors before sampling each bag through dilution and analysis of gases of known concentration.

8.2.1.5.2.3 Analyze the two field audit samples as described in Section 9.2 by connecting each bag containing an audit gas mixture to the sampling valve. Calculate the results; record and report the data to the audit supervisor.

16.1.1.12 Flexible Bags. Tedlar or equivalent, 10- and 50-liter capacity, for preparation of standards. (Verify through the manufacturer that the Tedlar alternative is suitable for the compound of interest and make this verifying information available for inspection.)

16.1.3.2 Flexible Bag Procedure. Any leak-free plastic (e.g., Tedlar, Mylar, Teflon) or plastic-coated aluminum (e.g., aluminized

Mylar) bag, or equivalent, can be used to obtain the pre-survey sample. Use new bags, and leak-check them before field use. In addition, check the bag before use for contamination by filling it with nitrogen or air and analyzing the gas by GC at high sensitivity. Experience indicates that it is desirable to allow the inert gas to remain in the bag about 24 hours or longer to check for desorption of organics from the bag. Follow the leak-check and sample collection procedures given in Section 8.2.1.

Figure 18-3. Preparation of Standards in Tedlar or Tedlar-Equivalent Bags and Calibration Curve

Figure 18-10. Field Sample Data Sheet—Tedlar or Tedlar-Equivalent Bag Collection Method

- 28. Amend appendix A-7 to part 60 as follows:
- a. By amending Method 23 as follows:
- i. By revising sections 2.2.7, 4.1.1.3, and 4.2.7.
- ii. By adding and reserving section 8.0.
- b. By revising Method 24, section 11.2.2.
- c. By revising Method 25, section 7.1.3.
- d. Amend Method 25C as follows:
- i. By revising sections 6.1 and 12.1.
- ii. By adding a new section 8.2.3.
- e. By revising Method 25D, the first sentence in section 9.1.

Appendix A-7 to Part 60—Test Methods 19 Through 25E

Method 23—Determination of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans From Stationary Sources

2.2.7 Storage Container. Air-tight container to store silica gel.

4.1.1.3 Sample Train. It is suggested that all components be maintained according to the procedure described in APTD-0576. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

4.2.7 Silica Gel. Note the color of the indicating silica gel to determine if it has been completely spent and make a mention of its condition. Transfer the silica gel from the fifth impinger to its original container and seal. If a moisture determination is made, follow the applicable procedures in sections 8.7.6.3 and 11.2.3 of Method 5 to handle and weigh the silica gel. If moisture is not measured, the silica gel may be disposed.

8.0 [Reserved]

* * * * *

Method 24—Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings

* * * * *

11.2.2 Volatile Content. To determine total volatile content, use the apparatus and reagents described in ASTM D2369 (incorporated by reference; see § 60.17 for the approved versions of the standard), respectively, and use the following procedures:

* * * * *

Method 25—Determination of Total Gaseous Nonmethane Organic Emissions as Carbon

* * * * *

7.1.3 Filters. Glass fiber filters, without organic binder, exhibiting at least 99.95 percent efficiency (<0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. The filter efficiency test shall be conducted in accordance with ASTM Method D2986–71, 78, or 95a (incorporated by reference—see § 60.17). Test data from the supplier's quality control program are sufficient for this purpose.

* * * * *

Method 25C—Determination of Nonmethane Organic Compounds (NMOC) in MSW Landfill Gases

* * * * *

6.1 Sample Probe. Stainless steel, with the bottom third perforated. Teflon probe liners and sampling lines are also allowed. Non-perforated probes are allowed as long as they are withdrawn to create a gap equivalent to having the bottom third perforated. The sample probe must be capped at the bottom and must have a threaded cap with a sampling attachment at the top. The sample probe must be long enough to go through and extend no less than 0.9 m (3 ft) below the landfill cover. If the sample probe is to be driven into the landfill, the bottom cap should be designed to facilitate driving the probe into the landfill.

* * * * *

8.2.3 Driven Probes. Closed-point probes may be driven directly into the landfill in a single step. This method may not require backfilling if the probe is adequately sealed by its insertion. Unperforated probes that are inserted in this manner and withdrawn at a distance from a detachable tip to create an open space are also acceptable.

* * * * *

12.1 Nomenclature.

B_w = Moisture content in the sample, fraction.

C_{N_2} = Reported N_2 concentration ($C_{N_2 \text{ Corr}}$ by Method 3C), fraction.

C_t = Calculated NMOC concentration, ppmv C equivalent.

C_{tm} = Measured NMOC concentration, ppmv C equivalent.

P_b = Barometric pressure, mm Hg.

P_t = Gas sample tank pressure after sampling, but before pressurizing, mm Hg absolute.

P_{tr} = Final gas sample tank pressure after pressurizing, mm Hg absolute.

P_u = Gas sample tank pressure after evacuation, mm Hg absolute.

P_w = Vapor pressure of H_2O (from Table 25C–1), mm Hg.

r = Total number of analyzer injections of sample tank during analysis (where j = injection number, 1 . . . r).

T_t = Sample tank temperature at completion of sampling, °K.

T_u = Sample tank temperature before sampling, °K.

T_{tr} = Sample tank temperature after pressurizing, °K.

* * * * *

Method 25D—Determination of the Volatile Organic Concentration of Waste Samples

* * * * *

9.1 Quality Control Samples. If audit samples are not available, prepare and analyze the two types of quality control samples (QCS) listed in Sections 9.1.1 and 9.1.2. * * *

* * * * *

29. Amend appendix A–8 to part 60 as follows:**a. By amending Method 26 as follows:****i. By revising sections 6.1.1, 6.1.5, and 8.1.2.****ii. By redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively.****iii. By adding a new section 16.0.****b. By revising Method 26A, sections 6.1.7, 8.1.5, and 8.1.6.****c. By amending Method 29 as follows:****i. By redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively.****ii. By adding a new section 16.0.****d. By revising Method 30B, the introductory text to section 8.2.2.1, the note to section 8.2.4, the note to section 8.2.6.2, and sections 9.0, 10.3, 10.4, 11.3.****Appendix A–8 to Part 60—Text Methods 26 Through 30B**

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Method 26—Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Non-Isokinetic Method

* * * * *

6.1.1 Probe. Borosilicate glass, approximately 3/8-in. (9-mm) I.D. with a heating system capable of maintaining a probe gas temperature during sampling between 120 and 134 °C (248 and 273 °F) to prevent moisture condensation; or Teflon where stack probes are below 210 °C. If HF is a target analyte, then preconditioning of new teflon components by heating should be considered to prevent potential HF outgassing. A Teflon-glass filter in a mat configuration should be installed to remove particulate matter from the gas stream.

* * * * *

6.1.5 Heating System. Any heating system capable of maintaining a temperature around the probe and filter holder between 120 and 134 °C (248 and 273 °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.

* * * * *

8.1.2 Adjust the probe temperature and the temperature of the filter and the stopcock (i.e., the heated area in Figure 26–1) to a temperature sufficient to prevent water condensation. This temperature must be maintained between 120 and 134 °C (248 and 273 °F). The temperature should be monitored throughout a sampling run to ensure that the desired temperature is maintained. It is important to maintain a temperature around the probe and filter in this range since it is extremely difficult to purge acid gases off these components. (These components are not quantitatively recovered and, hence, any collection of acid gases on these components would result in potential underreporting of these emissions. The applicable subparts may specify alternative higher temperatures.)

* * * * *

16.0 Alternative Procedures

Method 26A. Method 26A, which uses isokinetic sampling equipment, is an acceptable alternative to Method 26.

* * * * *

Method 26A—Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources—Isokinetic Method

* * * * *

6.1.7 Heating System. Any heating system capable of maintaining a temperature around the probe and filter holder between 120 and 134 °C (248 to 273 °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.

* * * * *

8.1.5 Sampling Train Operation. Follow the general procedure given in Method 5, Section 8.5. It is important to maintain a temperature around the probe, filter (and cyclone, if used) between 120 and 134 °C (248 and 273 °F) since it is extremely difficult to purge acid gases off these components. (These components are not quantitatively recovered and hence any collection of acid gases on these components would result in potential underreporting these emissions. The applicable subparts may specify alternative higher temperatures.) For each run, record the data required on a data sheet such as the one shown in Method 5, Figure 5–3. If the condensate impinger becomes too full, it may be emptied, recharged with 50 ml of 0.1 N H_2SO_4 , and replaced during the sample run. The condensate emptied must be saved and included in the measurement of the volume of moisture collected and included in the sample for analysis. The additional 50 ml of absorbing reagent must also be considered in calculating the moisture. Before the sampling train integrity is compromised by removing the impinger, conduct a leak-check as described in Method 5, Section 8.4.2.

8.1.6 Post-Test Moisture Removal (Optional). When the optional cyclone is included in the sampling train or when

liquid is visible on the filter at the end of a sample run even in the absence of a cyclone, perform the following procedure. Upon completion of the test run, connect the ambient air conditioning tube at the probe inlet and operate the train with the filter heating system between 120 and 134 °C (248 and 275 °F) at a low flow rate (e.g., $\Delta H = 1$ in. H_2O) to vaporize any liquid and hydrogen halides in the cyclone or on the filter and pull them through the train into the impingers. After 30 minutes, turn off the flow, remove the conditioning tube, and examine the cyclone and filter for any visible liquid. If liquid is visible, repeat this step for 15 minutes and observe again. Keep repeating until the cyclone is dry.

* * * * *

Method 29—Determination of Metals Emissions From Stationary Sources

* * * * *

16.0 Alternative Procedures

16.1 Alternative Analyzer. Samples may also be analyzed by cold vapor atomic fluorescence spectrometry.

16.2 [Reserved].

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Method 30B—Determination of Total Vapor Phase Mercury Emissions From Coal-Fired Combustion Sources Using Carbon Sorbent Traps

* * * * *

8.2.2.1 Determination of Minimum Calibration Concentration or Mass. Based on your instrument's sensitivity and linearity, determine the calibration concentrations or masses that make up a representative low level calibration range. Verify that you are able to meet the multipoint calibration performance criteria in section 11.0 of this method. Select a calibration concentration or mass that is no less than 2 times the lowest concentration or mass in your calibration curve. The lowest point in your calibration curve must be at least 5, and preferably 10, times the Method Detection Limit (MDL), which is the minimum amount of the analyte that can be detected and reported. The MDL must be determined at least once for the analytical system using an MDL study such as that found in section 15.0 to Method 301 of appendix A to part 63 of this chapter.

* * * * *

8.2.4 * * *

Note to Section 8.2.4: For the purposes of relative accuracy testing of Hg monitoring systems under subpart UUUUU of part 63 of this chapter and Performance Specifications 12A and 12B in appendix B to this part, when the stack gas Hg concentration is expected to be very low ($<0.5 \mu\text{g}/\text{dscm}$), you may estimate the Hg concentration at $0.5 \mu\text{g}/\text{dscm}$.

* * * * *

8.2.6.2 * * *

Note to Section 8.2.6.2: It is acceptable to perform the field recovery test concurrent with actual test runs (e.g., through the use of a quad probe). It is also acceptable to use the field recovery test runs as test runs for emissions testing or for the RATA of a Hg monitoring system under subpart UUUUU of part 63 of this chapter and Performance Specifications 12A and 12B in appendix B to this part, if certain conditions are met. To determine whether a particular field recovery test run may be used as a RATA run, subtract the mass of the Hg^0 spike from the total Hg mass collected in sections 1 and 2 of the spiked trap. The difference represents the mass of Hg in the stack gas sample. Divide this mass by the sample volume to obtain the Hg concentration in the effluent gas stream, as measured with the spiked trap. Compare this concentration to the corresponding Hg concentration measured with the unspiked trap. If the paired trains meet the relative deviation and other applicable data validation criteria in Table 9–1, then the average of the two Hg concentrations may be used as an emissions test run value or as the reference method value for a RATA run.

* * * * *

9.0 Quality Assurance and Quality Control

Table 9–1 summarizes the QA/QC performance criteria that are used to validate the Hg emissions data from Method 30B sorbent trap measurement systems.

TABLE 9–1—QUALITY ASSURANCE/QUALITY CONTROL CRITERIA FOR METHOD 30B

QA/QC test or specification	Acceptance criteria	Frequency	Consequences if not met
Gas flow meter calibration (At 3 settings or points).	Calibration factor (Y_i) at each flow rate must be within $\pm 2\%$ of the average value (Y).	Prior to initial use and when post-test check is not within $\pm 5\%$ of Y .	Recalibrate at 3 points until the acceptance criteria are met.
Gas flow meter post-test calibration check (Single-point).	Calibration factor (Y_i) must be within $\pm 5\%$ of the Y value from the most recent 3-point calibration.	After each field test. For mass flow meters, must be done on-site, using stack gas.	Recalibrate gas flow meter at 3 points to determine a new value of Y . For mass flow meters, must be done on-site, using stack gas. Apply the new Y value to the field test data.
Temperature sensor calibration	Absolute temperature measures by sensor within $\pm 1.5\%$ of a reference sensor.	Prior to initial use and before each test thereafter.	Recalibrate; sensor may not be used until specification is met.
Barometer calibration	Absolute pressure measured by instrument within ± 10 mm Hg of reading with a mercury barometer or NIST traceable barometer.	Prior to initial use and before each test thereafter.	Recalibrate; instrument may not be used until specification is met.
Pre-test leak check	$\leq 4\%$ of target sampling rate	Prior to sampling	Sampling shall not commence until the leak check is passed.
Post-test leak check	$\leq 4\%$ of average sampling rate	After sampling	Sample invalidated.*
Analytical matrix interference test (wet chemical analysis, only).	Establish minimum dilution (if any) needed to eliminate sorbent matrix interferences.	Prior to analyzing any field samples; repeat for each type of sorbent used.	Field sample results not validated.
Analytical bias test	Average recovery between 90% and 110% for Hg^0 and $HgCl_2$ at each of the 2 spike concentration levels.	Prior to analyzing field samples and prior to use of new sorbent media.	Field samples shall not be analyzed until the percent recovery criteria has been met.
Multipoint analyzer calibration	Each analyzer reading within $\pm 10\%$ of true value and $r^2 \geq 0.99$.	On the day of analysis, before analyzing any samples.	Recalibrate until successful.
Analysis of independent calibration standard.	Within $\pm 10\%$ of true value	Following daily calibration, prior to analyzing field samples.	Recalibrate and repeat independent standard analysis until successful.

TABLE 9-1—QUALITY ASSURANCE/QUALITY CONTROL CRITERIA FOR METHOD 30B—Continued

QA/QC test or specification	Acceptance criteria	Frequency	Consequences if not met
Analysis of continuing calibration verification standard (CCVS).	Within $\pm 10\%$ of true value	Following daily calibration, after analyzing ≤ 10 field samples, and at end of each set of analyses.	Recalibrate and repeat independent standard analysis, re-analyze samples until successful, if possible; for destructive techniques, samples invalidated.
Test run total sample volume	Within $\pm 20\%$ of total volume sampled during field recovery test.	Each individual sample	Sample invalidated.
Sorbent trap section 2 breakthrough.	For compliance/emissions testing: $\leq 10\%$ of section 1 Hg mass for Hg concentrations $> 1 \mu\text{g/dscm}$; $\leq 20\%$ of section 1 Hg mass for Hg concentrations $\leq 1 \mu\text{g/dscm}$. $\leq 50\%$ of section 1 Hg mass if the stack Hg concentration is $\leq 30\%$ of the Hg concentration that is equivalent to the applicable emission limit. For relative accuracy testing: $\leq 10\%$ of section 1 Hg mass for Hg concentrations $> 1 \mu\text{g/dscm}$; $\leq 20\%$ of section 1 Hg mass for Hg concentrations $\leq 1 \mu\text{g/dscm}$ and $> 0.5 \mu\text{g/dscm}$; $\leq 50\%$ of section 1 Hg mass for Hg concentrations $\leq 0.5 \mu\text{g/dscm}$ and $> 0.1 \mu\text{g/dscm}$; no criterion for Hg concentrations $\leq 0.1 \mu\text{g/dscm}$ (must meet all other QA/QC specifications).	Every sample	Sample invalidated.*
Paired sorbent trap agreement	$\leq 10\%$ Relative Deviation (RD) mass for Hg concentrations $> 1 \mu\text{g/dscm}$; $\leq 20\%$ RD or $\leq 0.2 \mu\text{g/dscm}$ absolute difference for Hg concentrations $\leq 1 \mu\text{g/dscm}$.	Every run	Run invalidated.*
Sample analysis	Within valid calibration range (within calibration curve).	All Section 1 samples where stack Hg concentration is $\geq 0.02 \mu\text{g/dscm}$ except in case where stack Hg concentration is $\leq 30\%$ of the applicable emission limit.	Reanalyze at more concentrated level if possible, samples invalidated if not within calibrated range.
Sample analysis	Within bounds of Hg^0 and HgCl_2 Analytical Bias Test.	All Section 1 samples where stack Hg concentration is $\geq 0.5 \mu\text{g/dscm}$.	Expand bounds of Hg^0 and HgCl_2 Analytical Bias Test; if not successful, samples invalidated.
Field recovery test	Average recovery between 85% and 115% for Hg^0 .	Once per field test	Field sample runs not validated without successful field recovery test.

* And data from the pair of sorbent traps are also invalidated.

* * * * *

10.3 Thermocouples and Other Temperature Sensors. Use the procedures and criteria in Section 10.3 of Method 2 in appendix A-1 to this part to calibrate in-stack temperature sensors and thermocouples. Dial thermometers shall be calibrated against mercury-in-glass thermometers or equivalent. Calibrations must be performed prior to initial use and before each field test thereafter. At each calibration point, the absolute temperature measured by the temperature sensor must agree to within ± 1.5 percent of the

temperature measured with the reference sensor, otherwise the sensor may not continue to be used.

10.4 Barometer. Calibrate against a mercury barometer or other NIST-traceable barometer as per Section 10.6 of Method 5 in appendix A-3 to this part. Calibration must be performed prior to initial use and before each test program, and the absolute pressure measured by the barometer must agree to within ± 10 mm Hg of the pressure measured by the mercury or other NIST-traceable

barometer, otherwise the barometer may not continue to be used.

* * * * *

11.3 Field Sample Analyses. Analyze the sorbent trap samples following the same procedures that were used for conducting the Hg^0 and HgCl_2 analytical bias tests. The individual sections of the sorbent trap and their respective components must be analyzed separately (i.e., section 1 and its components, then section 2 and its components). All sorbent trap section 1 sample analyses must be within the

calibrated range of the analytical system as specified in Table 9–1. For wet analyses, the sample can simply be diluted to fall within the calibrated range. However, for the destructive thermal analyses, samples that are not within the calibrated range cannot be re-analyzed. As a result, the sample cannot be validated, and another sample must be collected. It is strongly suggested that the analytical system be calibrated over multiple ranges so that thermally analyzed samples fall within the calibrated range. The total mass of Hg measured in each sorbent trap section 1 must also fall within the lower and upper mass limits established during the initial Hg⁰ and HgCl₂ analytical bias test. If a sample is analyzed and found to fall outside of these limits, it is acceptable for an additional Hg⁰ and HgCl₂ analytical bias test to be performed that now includes this level. However, some samples (e.g., the mass collected in trap section 2), may have Hg levels so low that it may not be possible to quantify them in the analytical system's calibrated range. Because a reliable estimate of these low-level Hg measurements is necessary to fully validate the emissions data, the MDL (see section 8.2.2.1 of this method) is used to establish the minimum amount that can be detected and reported. If the measured mass or concentration is below the lowest point in the calibration curve and above the MDL, the analyst must estimate the mass or concentration of the sample based on the analytical instrument response relative to an additional calibration standard at a concentration or mass between the MDL and the lowest point in the calibration curve. This is accomplished by establishing a response factor (e.g., area counts per Hg mass or concentration) and estimating the amount of Hg present in the sample based on the analytical response and this response factor.

Example: The analysis of a particular sample results in a measured mass above the MDL, but below the lowest point in the calibration curve which is 10 ng. An MDL of 1.3 ng Hg has been established by the MDL study. A calibration standard containing 5 ng of Hg is analyzed and gives an analytical response of 6,170 area counts, which equates to a response factor of 1,234 area counts/ng Hg. The analytical response for the sample is 4,840 area counts. Dividing the analytical response for the sample (4,840 area counts) by the response factor gives 3.9 ng Hg, which is the estimated mass of Hg in the sample.

* * *

■ 30. Amend appendix B to part 60 as follows:

■ a. By revising Performance Specification 3, section 13.2.

■ b. By revising Performance Specification 4, section 8.2.

■ c. By revising Performance Specification 4B, section 7.1.1.

■ d. By amending Performance Specification 7 as follows:

■ i. By revising section 8.4.

■ ii. By adding reference 5. to section 16.0.

■ e. By revising Performance Specification 11, sections 12.1(1) and (2).

■ f. By revising Performance Specification 12B, table 12B–1 in section 9.0 and section 12.8.3.

■ g. By revising Performance Specification 15, sections 11.1.1.4.2 and 11.1.1.4.3.

■ h. By revising Performance Specification 16, sections 6.1.7, 8.2.1, 9.1, 9.3, 9.4, 12.4, and 13.5.

Appendix B to Part 60—Performance Specifications

* * *

Performance Specification 3—Specifications and Test Procedures for O₂ and CO₂ Continuous Emission Monitoring Systems in Stationary Sources

* * *

13.2 CEMS Relative Accuracy Performance Specification. The RA of the CEMS must be no greater than 20 percent of the mean value of the reference method (RM) data. The results are also acceptable if the absolute value of the difference between the mean RM value and the mean CEMS value is less than or equal to 1.0 percent O₂ (or CO₂).

* * *

Performance Specification 4—Specifications and Test Procedures for Carbon Monoxide Continuous Emission Monitoring Systems in Stationary Sources

* * *

8.2 Reference Methods. Unless otherwise specified in an applicable subpart of the regulation, Method 10, 10A, 10B or other approved alternative are the RM for this PS.

* * *

Performance Specification 4B—Specifications and Test Procedures for Carbon Monoxide and Oxygen Continuous Monitoring Systems in Stationary Sources

* * *

7.1.1 *Calculations.* Summarize the results on a data sheet. 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:

$$CE = |d/FS| \times 100 \text{ (1)}$$

Where d is the mean difference between the CEMS response and the known reference concentration, and FS is the span value. The CE for the O₂ monitor is the average percent O₂ difference between the O₂ monitor and the certified cylinder gas value for each gas.

* * *

Performance Specification 7—Specifications and Test Procedures for Hydrogen Sulfide Continuous Emission Monitoring Systems in Stationary Sources

* * *

8.4 Relative Accuracy Test Procedure.

8.4.1 Sampling Strategy for RM Tests, Number of RM Tests, Correlation of RM and CEMS Data, and Calculations. These are the same as that in PS–2, Sections 8.4.3 (except as specified below), 8.4.4, 8.4.5, and 8.4.6, respectively.

8.4.2 Reference Methods. Unless otherwise specified in an applicable subpart of the regulation, Methods 11, 15, and 16 may be used for the RM for this PS.

8.4.2.1 Sampling Time Per Run—Method 11. A sampling run, when Method 11 (integrated sampling) is used, shall consist of a single measurement for at least 10 minutes and 0.010 dscm (0.35 dscf). Each sample shall be taken at approximately 30-minute intervals.

8.4.2.2 Sampling Time Per Run—Methods 15 and 16. The sampling run shall consist of two injections equally spaced over a 30-minute period following the procedures described in the particular method. **Note:** Caution! Heater or non-approved electrical probes should not be used around explosive or flammable sources.

* * *

16.0 * * *

5. Letter to RAMCON Environmental Corp. from Robert Kellam, December 27, 1992.

* * *

Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources

* * *

12.1 * * *

(1) Calculate the upscale drift (UD) using Equation 11–1:

$$UD = \frac{|R_{CEM} - R_U|}{FS} \times 100 \quad (\text{Eq. 11-1})$$

Where:

UD = The upscale (high-level) drift of your PM CEMS in percent,

R_{CEM} = The measured PM CEMS response to the upscale reference standard, and
R_U = The pre-established numerical value of the upscale reference standard.

FS = Full-scale value.

(2) Calculate the zero drift (ZD) using Equation 11–2:

$$ZD = \frac{|R_{CEM} - R_L|}{FS} \times 100 \quad (\text{Eq. 11-2})$$

Where:

ZD = The zero (low-level) drift of your PM CEMS in percent,

R_{CEM} = The measured PM CEMS response to the zero reference standard,R_L = The pre-established numerical value of the zero reference standard, and

FS = Full-scale value.

* * * * *

**Performance Specification 12B—
Specifications and Test Procedures for
Monitoring Total Vapor Phase Mercury
Emissions from Stationary Sources Using a
Sorbent Trap Monitoring System**

* * * * *

9.0 * * *

TABLE 12B-1—QA/QC CRITERIA FOR SORBENT TRAP MONITORING SYSTEMS

QA/QC test or specification	Acceptance criteria	Frequency	Consequences if not met
Pre-test leak check	≤4% of target sampling rate	Prior to monitoring	Monitoring must not commence until the leak check is passed.
Post-test leak check	≤4% of average sampling rate	After monitoring	Invalidate the data from the paired traps or, if certain conditions are met, report adjusted data from a single trap (see Section 12.8.3).
Ratio of stack gas flow rate to sample flow rate.	No more than 5% of the hourly ratios or 5 hourly ratios (whichever is less restrictive) may deviate from the reference ratio by more than ±25%.	Every hour throughout monitoring period.	Invalidate the data from the paired traps or, if certain conditions are met, report adjusted data from a single trap (see Section 12.8.3).
Sorbent trap section 2 breakthrough.	≤5% of Section 1 Hg mass ≤10% of Section 1 Hg mass if average Hg concentration is ≤0.5 µg/scm. No criterion when Hg concentration for trap less than 10% of the applicable emission limit (must meet all other QA/QC specifications).	Every sample	Invalidate the data from the paired traps or, if certain conditions are met, report adjusted data from a single trap (see Section 12.8.3).
Paired sorbent trap agreement	≤10% Relative Deviation (RD) if the average concentration is > 1.0 µg/m³. ≤20% RD if the average concentration is ≤1.0 µg/m³. Results also acceptable if absolute difference between concentrations from paired traps is ≤0.03 µg/m³.	Every sample	Either invalidate the data from the paired traps or report the results from the trap with the higher Hg concentration.
Spike Recovery Study	Average recovery between 85% and 115% for each of the 3 spike concentration levels.	Prior to analyzing field samples and prior to use of new sorbent media.	Field samples must not be analyzed until the percent recovery criteria have been met.
Multipoint analyzer calibration	Each analyzer reading within ± 10% of true value and r² ≥ 0.99.	On the day of analysis, before analyzing any samples.	Recalibrate until successful.
Analysis of independent calibration standard.	Within ± 10% of true value	Following daily calibration, prior to analyzing field samples.	Recalibrate and repeat independent standard analysis until successful.
Spike recovery from section 3 of both sorbent traps.	75–125% of spike amount	Every sample	Invalidate the data from the paired traps or, if certain conditions are met, report adjusted data from a single trap (see Section 12.8.3).
Relative Accuracy	RA ≤ 20.0% of RM mean value; or if RM mean value ≤5.0 µg/scm, absolute difference between RM and sorbent trap monitoring system mean values ≤1.0 µg/scm.	RA specification must be met for initial certification.	Data from the system are invalid until a RA test is passed.

TABLE 12B-1—QA/QC CRITERIA FOR SORBENT TRAP MONITORING SYSTEMS—Continued

QA/QC test or specification	Acceptance criteria	Frequency	Consequences if not met
Gas flow meter calibration	An initial calibration factor (Y) has been determined at 3 settings; for mass flow meters, initial calibration with stack gas has been performed. For subsequent calibrations, Y within $\pm 5\%$ of average value from the most recent 3-point calibration.	At 3 settings prior to initial use and at least quarterly at one setting thereafter.	Recalibrate meter at 3 settings to determine a new value of Y.
Temperature sensor calibration	Absolute temperature measured by sensor within $\pm 1.5\%$ of a reference sensor.	Prior to initial use and at least quarterly thereafter.	Recalibrate; sensor may not be used until specification is met.
Barometer calibration	Absolute pressure measured by instrument within ± 10 mm Hg of reading with a NIST-traceable barometer.	Prior to initial use and at least quarterly thereafter.	Recalibrate; instrument may not be used until specification is met.

* * * * *

12.8.3 For the routine, day-to-day operation of the monitoring system, when one of the two sorbent trap samples or sampling systems either: (a) Fails the post-monitoring leak check; or (b) has excessive section 2 breakthrough; or (c) fails to maintain the proper stack flow-to-sample flow ratio; or (d) fails to achieve the required section 3 spike recovery; or (e) is lost, broken, or damaged, provided that the other trap meets the acceptance criteria for all four of these QC specifications, the Hg concentration measured by the valid trap may be multiplied by a factor of 1.111 and then used for reporting purposes. Further, if both traps meet the acceptance criteria for all four of these QC specifications, but the acceptance criterion for paired trap agreement is not met, the owner or operator may report the higher of the two Hg concentrations measured by the traps, in lieu of invalidating the data from the paired traps.

* * * * *

Performance Specification 15—Performance Specification for Extractive FTIR Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

11.1.1.4.2 RMs Using a Grab Sampling Technique. Synchronize the RM and FTIR CEM measurements as closely as possible. For a grab sampling RM, record the volume collected and the exact sampling period for each sample. Synchronize the FTIR CEM so that the FTIR measures a spectrum of a similar cell volume at the same time as the

RM grab sample was collected. Measure at least five independent samples with both the FTIR CEM and the RM for each of the minimum nine runs. Compare the run concentration averages by using the relative accuracy analysis procedure in Performance Specification 2 of appendix B of 40 CFR part 60.

11.1.1.4.3 Continuous Emission Monitors as RMs. If the RM is a CEM, synchronize the sampling flow rates of the RM and the FTIR CEM. Each run is at least 1 hour long and consists of at least 10 FTIR CEM measurements and the corresponding 10 RM measurements (or averages). For the statistical comparison, use the relative accuracy analysis procedure in Performance Specification 2 of appendix B of 40 CFR part 60. If the RM time constant is $< \frac{1}{2}$ the FTIR CEM time constant, brief fluctuations in analyte concentrations that are not adequately measured with the slower FTIR CEM time constant can be excluded from the run average along with the corresponding RM measurements. However, the FTIR CEM run average must still include at least 10 measurements over a 1-hour period.

* * * * *

Performance Specification 16—Specifications and Test Procedures for Predictive Emission Monitoring Systems in Stationary Sources

* * * * *

6.1.7 Sensor Location and Repair. We recommend you install sensors in an accessible location in order to perform repairs and replacements. Permanently-

installed platforms or ladders may not be needed. If you install sensors in an area that is not accessible, you may be required to shut down the emissions unit to repair or replace a sensor. Conduct a new RATA after replacing a sensor that supplies a critical PEMS parameter if the new sensor provides a different output or scaling or changes the historical training dataset of the PEMS. Replacement of a non-critical sensor that does not cause an impact in the accuracy of the PEMS does not trigger a RATA. All sensors must be calibrated as often as needed but at least as often as recommended by the manufacturers.

* * * * *

8.2.1 Reference Methods. Unless otherwise specified in the applicable regulations, you must use the test methods in appendix A of this part for the RM test. Conduct the RM tests at three operating levels. The RM tests shall be performed at a low-load (or production) level between the minimum safe, stable load and 50 percent of the maximum level load, at the mid-load level (an intermediary level between the low and high levels), and at a high-load level between 80 percent and the maximum load. Alternatively, if practicable, you may test at three levels of the key operating parameter (e.g. selected based on a covariance analysis between each parameter and the PEMS output) equally spaced within the normal range of the parameter.

* * * * *

9.1 QA/QC Summary. Conduct the applicable ongoing tests listed below.

ONGOING QUALITY ASSURANCE TESTS

Test	PEMS regulatory purpose	Acceptability	Frequency
Sensor Evaluation	All		Daily.
RAA	Compliance	3-test avg $\leq 10\%$ of simultaneous analyzer or RM average.	Each quarter except quarter when RATA performed.
RATA	All	Same as for RA in Sec. 13.1	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 $F_{critical} \geq F$	Optional after initial and subsequent RATAs.
		$r \geq 0.8$	

ONGOING QUALITY ASSURANCE TESTS—Continued

Test	PEMS regulatory purpose	Acceptability	Frequency
Sensor Evaluation Alert Test (optional).	All	See Section 6.1.8	After each PEMS training.

* * * * *

9.3 Quarterly Relative Accuracy Audits. In the first year of operation after the initial certification, perform a RAA consisting of at least three 30-minute portable analyzer or RM determinations each quarter a RATA is not performed. To conduct a RAA, follow the procedures in Section 8.2 for the relative accuracy test, except that only three sets of measurement data are required, and the statistical tests are not required. The average of the three or more portable analyzer or RM

determinations must not exceed the limits given in Section 13.5. Report the data from all sets of measurement data. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly RATA in the second year, you may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, you must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly

RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA.

9.4 Yearly Relative Accuracy Test. Perform a minimum 9-run RATA at the normal operating level on a yearly basis in the quarter that the RAA is not performed. The statistical tests in Section 8.3 are not required for the yearly RATA.

* * * * *

12.4 Relative Accuracy Audit. Calculate the quarterly RAA using Equation 16–9.

$$RAA = \frac{\overline{PEMS} - \overline{RM}}{\overline{RM}} \times 100 \quad \text{Eq. 16-9}$$

* * * * *

13.5 Relative Accuracy Audits. 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 20 percent for concentrations between 100 and 20 ppm, or the test is failed. For measurements at 20 ppm or less, this difference must not exceed 2 ppm for a pollutant PEMS and 1 percent absolute for a diluents PEMS.

* * * * *

■ 31. Amend appendix F to Part 60 as follows:

■ a. By revising Procedure 1, section 6.2.

■ b. By revising Procedure 2, paragraphs (3) and (4) of section 12.0.

■ c. By redesignating the second listing of section 6.2.6 as section 6.2.7 in Procedure 5.

Appendix F to Part 60—Quality Assurance Procedures

* * * * *

Procedure 1—Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination

* * * * *

6.2 RAA Accuracy Calculation. Use the calculation procedure in the relevant performance specification to calculate the

accuracy for the RAA. The RAA must be calculated in the units of the applicable emission standard.

* * * * *

Procedure 2—Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources

* * * * *

12.0 What calculations and data analysis must I perform for my PM CEMS?

* * * * *

(3) How do I calculate daily upscale and zero drift? You must calculate the upscale drift using Equation 2–2 and the zero drift using Equation 2–3:

$$UD = \frac{|R_{CEM} - R_U|}{FS} \times 100 \quad (\text{Eq. 2-2})$$

Where:

UD = The upscale drift of your PM CEMS, in percent,

R_{CEM} = Your PM CEMS response to the upscale check value, and
 R_U = The upscale check value.

FS = Full-scale value.

$$ZD = \frac{|R_{CEM} - R_L|}{FS} \times 100 \quad (\text{Eq. 2-3})$$

Where:

ZD = The zero (low-level) drift of your PM CEMS, in percent,

R_{CEM} = Your PM CEMS response of the zero check value,
 R_L = The zero check value.

(4) How do I calculate SVA accuracy? You must use Equation 2–4 to calculate the accuracy, in percent, for each of the three SVA tests or the daily sample volume check:

$$\text{Accuracy} = \frac{(V_R - V_M)}{V_R} \times 100 \quad (\text{Eq. 2-4})$$

Where:

V_M = Sample gas volume determined/
reported by your PM CEMS (e.g., dscm),
 V_R = Sample gas volume measured by the
independent calibrated reference device
(e.g., dscm) for the SVA or the reference
value for the daily sample volume check.

Note: Before calculating SVA accuracy, you must correct the sample gas volumes measured by your PM CEMS and the independent calibrated reference device to the same basis of temperature, pressure, and moisture content. You must document all data and calculations.

* * * * *

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

■ 32. The authority citation for part 61 continues to read as follows:

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

Subpart A—[Amended]

■ 33. Amend § 61.13 by revising paragraph (e)(1)(i) to read as follows:

§ 61.13 Emission tests and waiver of emission tests.

* * * * *

(e) * * *

(1) * * *

(i) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60; Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60; Method 18 and 19 of appendix A-6 of part 60; Methods 20, 22, and 25A of appendix A-7 of part 60; and Methods 303, 318, 320, and 321 of appendix A of part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, www.epa.gov/ttn/emc, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days

prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

* * * * *

Subpart C—[Amended]

■ 34. Amend § 61.33 by revising paragraph (a) to read as follows:

§ 61.33 Stack sampling.

(a) Unless a waiver of emission testing is obtained under § 61.13, each owner or operator required to comply with § 61.32(a) shall test emissions from the source according to Method 104 of appendix B to this part or according to Method 29 of appendix A to part 60. Method 103 of appendix B to this part is approved by the Administrator as an alternative method for sources subject to

§ 61.32(a). The emission test shall be performed:

(1) By May 28, 2014 in the case of an existing source or a new source which has an initial startup date preceding February 27, 2014; or

(2) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding February 27, 2014.

* * * * *

Subpart D—[Amended]

■ 35. Amend § 61.42 by revising paragraph (a) to read as follows:

§ 61.42 Emission standard.

(a) Emissions to the atmosphere from rocket-motor test sites shall not cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter ($\mu\text{g-min}/\text{m}^3$) (4.68×10^{-9} pound minutes per cubic foot ($\text{lb-min}/\text{ft}^3$)) of air within the limits of 10 to 60 minutes, accumulated during any 2 consecutive weeks, in any area in which an adverse effect to public health could occur.

* * * * *

Subpart E—[Amended]

■ 36. Amend § 61.53 by revising paragraph (d)(2) to read as follows:

§ 61.53 Stack sampling.

* * * * *

(d) * * *

(2) Method 101A in appendix B or Method 29 in appendix A to part 60 shall be used to test emissions as follows:

(i) The test shall be performed by May 28, 2014 in the case of an existing source or a new source which has an initial startup date preceding February 27, 2014.

(ii) The test shall be performed within 90 days of startup in the case of a new source which did not have an initial startup date preceding February 27, 2014.

* * * * *

Subpart N—[Amended]

■ 37. Amend § 61.164 as follows:

■ a. By revising paragraph (d)(2)(i).

■ b. By revising paragraph (e)(1)(i).

■ c. By revising paragraph (e)(2) to read as follows:

§ 61.164 Test methods and procedures.

* * * * *

(d) * * *

(2) * * *

(i) Use Method 108 in appendix B to this part or Method 29 in appendix A to part 60 for determining the arsenic

emission rate, g/hr (lb/hr). The emission rate shall equal the arithmetic mean of the results of three 60-minute test runs.

* * * * *

(e) * * *

(1) * * *

(i) Use Method 108 in appendix B to this part or Method 29 in appendix A to part 60 to determine the concentration of arsenic in the gas streams entering and exiting the control device. Conduct three 60-minute test runs, each consisting of simultaneous testing of the inlet and outlet gas streams. The gas streams shall contain all the gas exhausted from the glass melting furnace.

* * * * *

(2) Calculate the percent emission reduction for each run as follows:

$$D = \frac{(C_b - C_a) \times 100}{C_b}$$

Where:

D = the percent emission reduction.

C_b = the arsenic concentration of the stack gas entering the control device, as measured by Method 108 or Method 29.

C_a = the arsenic concentration of the stack gas exiting the control device, as measured by Method 108 or Method 29.

* * * * *

■ 38. Amend appendix B to part 61 to read as follows:

■ a. By amending Method 101 by redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively, and by adding a new section 16.0.

■ b. By amending Method 101A by redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively, and by adding a new section 16.0.

■ c. By revising Method 102, section 8.1.1.1.

■ d. By amending Method 104 as follows:

■ i. By revising sections 4.1 and 11.5.3.

■ ii. By redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively.

■ iii. By adding a new section 16.0.

■ e. By amending Method 108 by redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0, respectively, and by adding a new section 16.0.

■ f. By amending Method 108A by redesignating sections 16.0 and 17.0 as sections 17.0 and 18.0 respectively, and by adding a new section 16.0.

Appendix B to Part 61—Test Methods

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Method 101—Determination of Particulate and Gaseous Mercury Emissions From Chlor-Alkali Plants (Air Streams)

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16.0 Alternative Procedures

16.1 Alternative Analyzer. Samples may also be analyzed by cold vapor atomic fluorescence spectrometry.

* * * * *

Method 101A—Determination of Particulate and Gaseous Mercury Emissions From Sewage Sludge Incinerators

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16.0 Alternative Procedures

16.1 Alternative Analyzers.

16.1.1 Inductively coupled plasma-atomic emission spectrometry (ICP-AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP-AES application.

16.1.1.2 The quality control procedures are conducted as prescribed.

16.1.1.3 The limit of quantitation for the ICP-AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP-AES offers detection limits comparable to cold vapor atomic absorption.

16.1.2 Samples may also be analyzed by cold vapor atomic fluorescence spectrometry.

* * * * *

Method 102—Determination of Particulate and Gaseous Mercury Emissions From Chlor-Alkali Plants (Hydrogen Streams)

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8.1.1.1 Calibrate the meter box orifice. Use the techniques described in APTD-0576 (see Reference 9 in Section 17.0 of Method 5 of appendix A to part 60). Calibration of the orifice meter at flow conditions that simulate the conditions at the source is suggested. Calibration should either be done with hydrogen or with some other gas having a similar Reynolds Number so that there is similarity between the Reynolds Numbers during calibration and during sampling. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

Method 104—Determination of Beryllium Emissions From Stationary Sources

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4.1 Matrix Effects. Analysis for Be by flame atomic absorption spectrophotometry is sensitive to the chemical composition and to the physical properties (e.g., viscosity, pH) of the sample. Aluminum and silicon, in particular, are known to interfere when

present in appreciable quantities. The analytical procedure includes (optionally) the use of the Method of Standard Additions to check for these matrix effects, and sample analysis using the Method of Standard Additions if significant matrix effects are found to be present (see Reference 2 in Section 17.0).

* * * * *

11.5.3 Check for Matrix Effects (optional). Use the Method of Standard Additions (see Reference 2 in Section 17.0) to check at least one sample from each source for matrix effects on the Be results. If the results of the Method of Standard Additions procedure used on the single source sample do not agree to within 5 percent of the value obtained by the routine atomic absorption analysis, then reanalyze all samples from the source using the Method of Standard Additions procedure.

* * * * *

16.0 Alternative Procedures

16.1 Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) Analysis. ICP-AES may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP-AES application.

16.1.2 Quality Assurance/Quality Control procedures, including audit material analysis, are conducted as prescribed in the method. The QA acceptance conditions must be met.

16.1.3 The limit of quantitation for the ICP-AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP-AES offers detection limits comparable to cold vapor atomic absorption.

16.2 Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Analysis. ICP-MS may be used as an alternative to atomic absorption analysis.

16.3 Cold Vapor Atomic Fluorescence Spectrometry (CVAFS) Analysis. CVAFS may be used as an alternative to atomic absorption analysis.

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Method 108—Determination of Particulate and Gaseous Arsenic Emissions

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16.0 Alternative Procedures

16.1 Inductively coupled plasma-atomic emission spectrometry (ICP-AES) Analysis. ICP-AES may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method

except as necessary for the ICP-AES application.

16.1.2 Quality Assurance/Quality Control procedures, including audit material analysis, are conducted as prescribed in the method. The QA acceptance conditions must be met.

16.1.3 The limit of quantitation for the ICP-AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP-AES offers detection limits comparable to cold vapor atomic absorption.

16.2 Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Analysis. ICP-MS may be used as an alternative to atomic absorption analysis.

16.3 Cold Vapor Atomic Fluorescence Spectrometry (CVAFS) Analysis. CVAFS may be used as an alternative to atomic absorption analysis.

* * * * *

Method 108A—Determination of Arsenic Content in Ore Samples From Nonferrous Smelters

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16.0 Alternative Procedures

16.1 Alternative Analyzer. Inductively coupled plasma-atomic emission spectrometry (ICP-AES) may be used as an alternative to atomic absorption analysis provided the following conditions are met:

16.1.1 Sample collection, sample preparation, and analytical preparation procedures are as defined in the method except as necessary for the ICP-AES application.

16.1.2 Quality Assurance/Quality Control procedures, including audit material analysis, are conducted as prescribed in the method. The QA acceptance conditions must be met.

16.1.3 The limit of quantitation for the ICP-AES must be demonstrated and the sample concentrations reported should be no less than two times the limit of quantitation. The limit of quantitation is defined as ten times the standard deviation of the blank value. The standard deviation of the blank value is determined from the analysis of seven blanks. It has been reported that for mercury and those elements that form hydrides, a continuous-flow generator coupled to an ICP-AES offers detection limits comparable to cold vapor atomic absorption.

* * * * *

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

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

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

Subpart A—[Amended]

■ 40. Amend § 63.7 by revising paragraph (c)(2)(iii)(A) to read as follows:

§ 63.7 Performance testing requirements.

* * * * *

(c) * * *

(2) * * *

(iii) * * *

(A) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60; Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60; Methods 18 and 19 of appendix A-6 of part 60; Methods 20, 22, and 25A of appendix A-7 of part 60; and Methods 303, 318, 320, and 321 of appendix A of part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, www.epa.gov/ttn/emc, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall

report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

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■ 41. Amend § 63.8 by adding a sentence to the end of paragraph (f)(6)(iii) to read as follows:

§ 63.8 Monitoring requirements.

* * * * *

(f) * * *

(6) * * *

(iii) * * * The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 8.4 of Performance Specification 2.

* * * * *

■ 42. Revise § 63.14 to read as follows:

§ 63.14 Incorporations by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the EPA must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M St. SW., Washington, DC, telephone number 202-566, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For

information on the availability of this material at NARA, call 202-741-6030 or go to <http://www.archives.gov/federal-register/code-of-federal-regulations/ibr-locations.html>.

(b) The Association of Florida Phosphate Chemists, P.O. Box 1645, Bartow, Florida 33830.

(1) Book of Methods Used and Adopted By The Association of Florida Phosphate Chemists, Seventh Edition 1991:

(i) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample, IBR approved for §§ 63.606(c) and 63.626(c).

(ii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus— P_2O_5 or $Ca_3(PO_4)_2$, Method A—Volumetric Method, IBR approved for §§ 63.606(c) and 63.626(c).

(iii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus— P_2O_5 or $Ca_3(PO_4)_2$, Method B—Gravimetric Quimociac Method, IBR approved for §§ 63.606(c) and 63.626(c).

(iv) Section IX, Methods of Analysis For Phosphate Rock, No. 3 Phosphorus— P_2O_5 or $Ca_3(PO_4)_2$, Method C—Spectrophotometric Method, IBR approved for §§ 63.606(c) and 63.626(c).

(v) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus— P_2O_5 , Method A—Volumetric Method, IBR approved for §§ 63.606(c) and 63.626(c) and (d).

(vi) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus— P_2O_5 , Method B—Gravimetric Quimociac Method, IBR approved for §§ 63.606(c) and 63.626(c) and (d).

(vii) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus— P_2O_5 , Method C—Spectrophotometric Method, IBR approved for §§ 63.606(c) and 63.626(c) and (d).

(2) [Reserved]

(c) Association of Official Analytical Chemists (AOAC) International, Customer Services, Suite 400, 2200 Wilson Boulevard, Arlington, Virginia 22201-3301, Telephone (703) 522-3032, Fax (703) 522-5468.

(1) AOAC Official Method 929.01 Sampling of Solid Fertilizers, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(2) AOAC Official Method 929.02 Preparation of Fertilizer Sample, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(3) AOAC Official Method 957.02 Phosphorus (Total) in Fertilizers, Preparation of Sample Solution, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(4) AOAC Official Method 958.01 Phosphorus (Total) in Fertilizers, Spectrophotometric Molybdovanadophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(5) AOAC Official Method 962.02 Phosphorus (Total) in Fertilizers, Gravimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(6) AOAC Official Method 969.02 Phosphorus (Total) in Fertilizers, Alkalimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(7) AOAC Official Method 978.01 Phosphorus (Total) in Fertilizers, Automated Method, Sixteenth edition, 1995, IBR approved for § 63.626(d).

(d) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporative Loss from External Floating-Roof Tanks, Third Edition, February 1989, IBR approved for §§ 63.111 and 63.2406.

(2) API Publication 2518, Evaporative Loss from Fixed-roof Tanks, Second Edition, October 1991, IBR approved for § 63.150(g).

(3) API Manual of Petroleum Measurement Specifications (MPMS) Chapter 19.2 (API MPMS 19.2), Evaporative Loss From Floating-Roof Tanks, First Edition, April 1997, IBR approved for §§ 63.1251 and 63.12005.

(e) American Society of Heating, Refrigerating, and Air-Conditioning Engineers at 1791 Tullie Circle, NE., Atlanta, GA 30329 orders@ashrae.org.

(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 §§ 63.11173(e) and 63.11516(d).

(2) [Reserved]

(f) American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990, Telephone (800) 843-2763, <http://www.asme.org>; also available from HIS, Incorporated, 15 Inverness Way East, Englewood, CO 80112, Telephone (877) 413-5184, <http://global.ihs.com>.

(1) ANSI/ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], issued August 31, 1981, IBR approved for

§§ 63.309(k), 63.457(k), 63.772(e) and (h), 63.865(b), 63.1282(d) and (g), 63.3166(a), 63.3360(e), 63.3545(a), 63.3555(a), 63.4166(a), 63.4362(a), 63.4766(a), 63.4965(a), 63.5160(d), table 4 to subpart UUUU, 63.9307(c), 63.9323(a), 63.11148(e), 63.11155(e), 63.11162(f), 63.11163(g), 63.11410(j), 63.11551(a), 63.11646(a), and 63.11945, table 5 to subpart DDDDD, table 4 to subpart JJJJ, tables 4 and 5 of subpart UUUU, and table 1 to subpart ZZZZ.

(2) [Reserved]

(g) American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428-2959, Telephone (610) 832-9585, <http://www.astm.org>; also available from ProQuest, 789 East Eisenhower Parkway, Ann Arbor, MI 48106-1346, Telephone (734) 761-4700, <http://www.proquest.com>.

(1) ASTM D95-05 (Reapproved 2010), Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation, approved May 1, 2010, IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.

(2) ASTM D240-09 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, approved July 1, 2009, IBR approved for table 6 to subpart DDDDD.

(3) ASTM Method D388-05, Standard Classification of Coals by Rank, approved September 15, 2005, IBR approved for §§ 63.7575, 63.10042, and 63.11237.

(4) ASTM Method D396-10, Standard Specification for Fuel Oils, including Appendix X1, approved October 1, 2010, IBR approved for § 63.10042.

(5) ASTM D396-10, Standard Specification for Fuel Oils, approved October 1, 2010, IBR approved for §§ 63.7575 and 63.11237.

(6) ASTM D523-89, Standard Test Method for Specular Gloss, IBR approved for § 63.782.

(7) ASTM D975-11b, Standard Specification for Diesel Fuel Oils, approved December 1, 2011, IBR approved for § 63.7575.

(8) ASTM D1193-77, Standard Specification for Reagent Water, IBR approved for appendix A to part 63: Method 306, Sections 7.1.1 and 7.4.2.

(9) ASTM D1193-91, Standard Specification for Reagent Water, IBR approved for appendix A to part 63: Method 306, Sections 7.1.1 and 7.4.2.

(10) ASTM D1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents, IBR approved for appendix A to part 63: Method 306B, Sections 6.2, 11.1, and 12.2.2.

(11) ASTM D1475–90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for appendix A to subpart II.

(12) ASTM D1475–98 (Reapproved 2003), “Standard Test Method for Density of Liquid Coatings, Inks, and Related Products,” IBR approved for §§ 63.3151(b), 63.3941(b) and (c), 63.3951(c), 63.4141(b) and (c), and 63.4551(c).

(13) ASTM Method D1835–05, Standard Specification for Liquefied Petroleum (LP) Gases, approved April 1, 2005, IBR approved for §§ 63.7575 and 63.11237.

(14) ASTM D1945–03 (Reapproved 2010), Standard Test Method for Analysis of Natural Gas by Gas Chromatography, (Approved January 1, 2010), IBR approved for §§ 63.772(h), and 63.1282(g).

(15) ASTM D1946–77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for § 63.11(b).

(16) ASTM D1946–90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for § 63.11(b).

(17) ASTM D2013/D2013M–09, Standard Practice for Preparing Coal Samples for Analysis, (Approved November 1, 2009), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(18) ASTM D2099–00, Standard Test Method for Dynamic Water Resistance of Shoe Upper Leather by the Maeser Water Penetration Tester, IBR approved for § 63.5350.

(19) ASTM D2216–05, Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass, IBR approved for the definition of “Free organic liquids” in § 63.10692.

(20) ASTM D2234/D2234M–10, Standard Practice for Collection of a Gross Sample of Coal, approved January 1, 2010, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(21) ASTM D2369–93, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A to subpart II.

(22) ASTM D2369–95, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A to subpart II.

(23) ASTM D2382–76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b).

(24) ASTM D2382–88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b).

(25) ASTM D2697–86 (Reapproved 1998), Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings, IBR approved for §§ 63.3161(f), 63.3521(b), 63.3941(b), 63.4141(b), 63.4741(b), 63.4941(b), and 63.5160(c).

(26) ASTM D2879–83, Standard Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§ 63.111, 63.2406, and 63.12005.

(27) ASTM D2879–96, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, (Approved 1996), IBR approved for §§ 63.111, 63.2406, and 63.12005.

(28) ASTM D3173–03 (Reapproved 2008), Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, (Approved February 1, 2008), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(29) ASTM D3257–93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).

(30) ASTM D3588–98 (Reapproved 2003), Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, (Approved May 10, 2003), IBR approved for §§ 63.772(h) and 63.1282(g).

(31) ASTM D3695–88, Standard Test Method for Volatile Alcohols in Water by Direct Aqueous-Injection Gas Chromatography, IBR approved for § 63.365(e).

(32) ASTM D3792–91, Standard Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A to subpart II.

(33) ASTM D3912–80, Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(34) ASTM D4006–11, Standard Test Method for Water in Crude Oil by Distillation, including Annex A1 and Appendix X1, (Approved June 1, 2011), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.

(35) ASTM D4017–81, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.

(36) ASTM D4017–90, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.

(37) ASTM D4017–96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration

Method, IBR approved for appendix A to subpart II.

(38) ASTM D4057–06 (Reapproved 2011), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, including Annex A1, (Approved June 1, 2011), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.

(39) ASTM D4082–89, Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(40) ASTM D4084–07, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), (Approved June 1, 2007), IBR approved for table 6 to subpart DDDDD.

(41) ASTM D4177–95 (Reapproved 2010), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, including Annexes A1 through A6 and Appendices X1 and X2, (Approved May 1, 2010), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.

(42) ASTM D4208–02 (Reapproved 2007), Standard Test Method for Total Chlorine in Coal by the Oxygen Bomb Combustion/Ion Selective Electrode Method, approved May 1, 2007, IBR approved for table 6 to subpart DDDDD.

(43) ASTM D4256–89, Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(44) ASTM D4256–89 (Reapproved 94), Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(45) ASTM D4606–03 (Reapproved 2007), Standard Test Method for Determination of Arsenic and Selenium in Coal by the Hydride Generation/Atomic Absorption Method, (Approved October 1, 2007), IBR approved for table 6 to subpart DDDDD.

(46) ASTM D4809–95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for § 63.11(b).

(47) ASTM D4891–89 (Reapproved 2006), Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, (Approved June 1, 2006), IBR approved for §§ 63.772(h) and 63.1282(g).

(48) ASTM D5066–91 (Reapproved 2001), Standard Test Method for Determination of the Transfer Efficiency Under Production Conditions for Spray Application of Automotive Paints-

Weight Basis, IBR approved for § 63.3161(g).

(49) ASTM D5087-02, Standard Test Method for Determining Amount of Volatile Organic Compound (VOC) Released from Solventborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement), IBR approved for § 63.3165(e) and appendix A to subpart III.

(50) ASTM D5192-09, Standard Practice for Collection of Coal Samples from Core, (Approved June 1, 2009), IBR approved for table 6 to subpart DDDDD.

(51) ASTM D5198-09, Standard Practice for Nitric Acid Digestion of Solid Waste, (Approved February 1, 2009), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(52) ASTM D5228-92, Standard Test Method for Determination of Butane Working Capacity of Activated Carbon, (Reapproved 2005), IBR approved for § 63.11092(b).

(53) ASTM D5291-02, Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, IBR approved for appendix A to subpart MMMM.

(54) ASTM D5790-95, Standard Test Method for Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry, IBR approved for Table 4 to subpart UUUU.

(55) ASTM D5864-11, Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components, (Approved March 1, 2011), IBR approved for table 6 to subpart DDDDD.

(56) ASTM D5865-10a, Standard Test Method for Gross Calorific Value of Coal and Coke, (Approved May 1, 2010), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(57) ASTM D5954-98 (Reapproved 2006), Test Method for Mercury Sampling and Measurement in Natural Gas by Atomic Absorption Spectroscopy, (Approved December 1, 2006), IBR approved for table 6 to subpart DDDDD.

(58) ASTM D5965-02, Standard Test Methods for Specific Gravity of Coating Powders, IBR approved for §§ 63.3151(b) and 63.3951(c).

(59) ASTM D6053-00, Standard Test Method for Determination of Volatile Organic Compound (VOC) Content of Electrical Insulating Varnishes, IBR approved for appendix A to subpart MMMM.

(60) ASTM D6093-97 (Reapproved 2003), Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas

Pycnometer, IBR approved for §§ 63.3161, 63.3521, 63.3941, 63.4141, 63.4741(b), 63.4941(b), and 63.5160(c).

(61) ASTM D6266-00a, Test Method for Determining the Amount of Volatile Organic Compound (VOC) Released from Waterborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement), IBR approved for § 63.3165(e).

(62) ASTM D6323-98 (Reapproved 2003), Standard Guide for Laboratory Subsampling of Media Related to Waste Management Activities, (Approved August 10, 2003), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(63) ASTM D6348-03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, IBR approved for §§ 63.457(b) and 63.1349, table 4 to subpart DDDD, table 4 to subpart ZZZZ, and table 8 to subpart HHHHHH.

(64) ASTM D6348-03 (Reapproved 2010), Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, including Annexes A1 through A8, (Approved October 1, 2010), IBR approved for tables 1, 2, and 5 to subpart UUUUU and appendix B to subpart UUUUU.

(65) ASTM D6350-98 (Reapproved 2003), Standard Test Method for Mercury Sampling and Analysis in Natural Gas by Atomic Fluorescence Spectroscopy, (Approved May 10, 2003), IBR approved for table 6 to subpart DDDDD.

(66) ASTM D6357-11, Test Methods for Determination of Trace Elements in Coal, Coke, and Combustion Residues from Coal Utilization Processes by Inductively Coupled Plasma Atomic Emission Spectrometry, (Approved April 1, 2011), IBR approved for table 6 to subpart DDDDD.

(67) ASTM D6420-99, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, IBR approved for §§ 63.5799, 63.5850, and Table 4 of Subpart UUUU.

(68) ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, (Approved October 1, 2004), IBR approved for §§ 63.457(b), 63.485(g), 60.485a(g), 63.772(a), 63.772(e), 63.1282(a) and (d), 63.2351(b), and 63.2354(b), and table 8 to subpart HHHHHH.

(69) ASTM D6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for § 63.9307(c).

(70) ASTM D6522-00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, (Approved October 1, 2005), IBR approved for table 4 to subpart ZZZZ, table 5 to subpart DDDDDD, table 4 to subpart JJJJJ, and §§ 63.772(e) and (h) and 63.1282(d) and (g).

(71) ASTM D6721-01 (Reapproved 2006), Standard Test Method for Determination of Chlorine in Coal by Oxidative Hydrolysis Microcoulometry, (Approved April 1, 2006), IBR approved for table 6 to subpart DDDDD.

(72) ASTM D6722-01 (Reapproved 2006), Standard Test Method for Total Mercury in Coal and Coal Combustion Residues by the Direct Combustion Analysis, (Approved April 1, 2006), IBR approved for Table 6 to subpart DDDDD and Table 5 to subpart JJJJJ.

(73) ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, (Approved July 15, 2011), IBR approved for §§ 63.7575 and 63.11237.

(74) 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 §§ 63.11646(a), 63.11647(a) and (d), tables 1, 2, 5, 11, 12t, and 13 to subpart DDDDD, table 4 to subpart JJJJJ, table 5 to subpart UUUUU, and appendix A to subpart UUUUU.

(75) ASTM D6883-04, Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles, (Approved June 1, 2004), IBR approved for table 6 to subpart DDDDD.

(76) ASTM D7430-11a, Standard Practice for Mechanical Sampling of Coal, (Approved October 1, 2011), IBR approved for table 6 to subpart DDDDD.

(77) ASTM E145-94 (Reapproved 2001), Standard Specification for Gravity-Convection and Forced-Ventilation Ovens, IBR approved for appendix A to subpart PPPP.

(78) ASTM E180-93, Standard Practice for Determining the Precision of

ASTM Methods for Analysis and Testing of Industrial Chemicals, IBR approved for § 63.786(b).

(79) ASTM E260–91, General Practice for Packed Column Gas Chromatography, IBR approved for §§ 63.750(b) and 63.786(b).

(80) ASTM E260–96, General Practice for Packed Column Gas Chromatography, IBR approved for §§ 63.750(b) and 63.786(b).

(81) ASTM E515–95 (Reapproved 2000), Standard Test Method for Leaks Using Bubble Emission Techniques, IBR approved for § 63.425(i).

(82) ASTM E711–87 (Reapproved 2004), Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter, (Approved August 28, 1987), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(83) ASTM E776–87 (Reapproved 2009), Standard Test Method for Forms of Chlorine in Refuse-Derived Fuel, (Approved July 1, 2009), IBR approved for table 6 to subpart DDDDD.

(84) ASTM E871–82 (Reapproved 2006), Standard Test Method for Moisture Analysis of Particulate Wood Fuels, (Approved November 1, 2006), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(h) Bay Area Air Quality Management District (BAAQMD), 939 Ellis Street, San Francisco, California 94109, <http://www.arb.ca.gov/DRDB/BA/CURHTML/ST/st30.pdf>.

(1) “BAAQMD Source Test Procedure ST–30—Static Pressure Integrity Test, Underground Storage Tanks,” adopted November 30, 1983, and amended December 21, 1994, IBR approved for § 63.11120(a).

(2) [Reserved]

(i) British Standards Institute, 389 Chiswick High Road, London W4 4AL, United Kingdom.

(1) BS EN 1593:1999, Non-destructive Testing: Leak Testing—Bubble Emission Techniques, IBR approved for § 63.425(i).

(2) [Reserved]

(j) California Air Resources Board (CARB), Engineering and Certification Branch, 1001 I Street, P.O. Box 2815, Sacramento, CA 95812–2815, Telephone (916) 327–0900, <http://www.arb.ca.gov/vapor/vapor.htm>.

(1) California Air Resources Board Vapor Recovery Test Procedure TP–201.1—“Volumetric Efficiency for Phase I Vapor Recovery Systems,” adopted April 12, 1996, and amended February 1, 2001 and October 8, 2003, IBR approved for § 63.11120(b).

(2) California Air Resources Board Vapor Recovery Test Procedure TP–201.1E—“Leak Rate and Cracking

Pressure of Pressure/Vacuum Vent Valves,” adopted October 8, 2003, IBR approved for § 63.11120(a).

(3) California Air Resources Board Vapor Recovery Test Procedure TP–201.3—“Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities,” adopted April 12, 1996 and amended March 17, 1999, IBR approved for § 63.11120(a).

(k) Environmental Protection Agency, Air and Radiation Docket and Information Center, 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone number (202) 566–1745.

(1) California Regulatory Requirements Applicable to the Air Toxics Program, November 16, 2010, IBR approved for § 63.99(a).

(2) New Jersey’s Toxic Catastrophe Prevention Act Program, (July 20, 1998), IBR approved for § 63.99(a).

(3) Delaware Department of Natural Resources and Environmental Control, Division of Air and Waste Management, Accidental Release Prevention Regulation, sections 1 through 5 and sections 7 through 14, effective January 11, 1999, IBR approved for § 63.99(a).

(4) State of Delaware Regulations Governing the Control of Air Pollution (October 2000), IBR approved for § 63.99(a).

(5) Massachusetts Department of Environmental Protection regulations at 310 CMR 7.26(10)–(16), Air Pollution Control, effective as of September 5, 2008, corrected March 6, 2009, and 310 CMR 70.00, Environmental Results Program Certification, effective as of December 28, 2007. IBR approved for § 63.99(a).

(6)(i) New Hampshire Regulations Applicable to Hazardous Air Pollutants, March, 2003. IBR approved for § 63.99(a).

(ii) New Hampshire Regulations Applicable to Hazardous Air Pollutants, September 2006. IBR approved for § 63.99(a).

(7) Maine Department of Environmental Protection regulations at Chapter 125, Perchloroethylene Dry Cleaner Regulation, effective as of June 2, 1991, last amended on June 24, 2009. IBR approved for § 63.99(a).

(8) California South Coast Air Quality Management District’s “Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989,” IBR approved for §§ 63.11173(e) and 63.11516(d).

(9) California South Coast Air Quality Management District’s “Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002,”

Revision 0, IBR approved for §§ 63.11173(e) and 63.11516(d).

(10) Rhode Island Department of Environmental Management regulations at Air Pollution Control Regulation No. 36, Control of Emissions from Organic Solvent Cleaning, effective April 8, 1996, last amended October 9, 2008, IBR approved for § 63.99(a).

(11) Rhode Island Air Pollution Control, General Definitions Regulation, effective July 19, 2007, last amended October 9, 2008. IBR approved for § 63.99(a).

(12) Alaska Statute 42.45.045. Renewable energy grant fund and recommendation program, available at <http://www.legis.state.ak.us/basis/folio.asp>, IBR approved for § 63.6675.

(l) U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460, (202) 272–0167, <http://www.epa.gov>.

(1) EPA–453/R–01–005, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Plants—Background Information for Proposed Standards, Final Report, January 2001, IBR approved for § 63.7491(g).

(2) EPA–454/R–98–015, Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, September 1997, IBR approved for §§ 63.548(e), 63.7525(j), and 63.11224(f).

(3) SW–846–3020A, Acid Digestion of Aqueous Samples And Extracts For Total Metals For Analysis By GFAA Spectroscopy, Revision 1, July 1992, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(4) SW–846–3050B, Acid Digestion of Sediments, Sludges, and Soils, Revision 2, December 1996, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(5) SW–846–7470A, Mercury In Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(6) SW–846–7471B, Mercury In Solid Or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,

Third Edition, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJ.

(7) SW-846-8015C, Nonhalogenated Organics by Gas Chromatography, Revision 3, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.11960, 63.11980, and table 10 to subpart HHHHHH.

(8) SW-846-8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.11960, 63.11980, and table 10 to subpart HHHHHH.

(9) SW-846-8270D, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.11960, 63.11980, and table 10 to subpart HHHHHH.

(10) SW-846-8315A, Determination of Carbonyl Compounds by High Performance Liquid Chromatography (HPLC), Revision 1, December 1996, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for §§ 63.11960 and 63.11980, and table 10 to subpart HHHHHH.

(11) SW-846-5050, Bomb Preparation Method for Solid Waste, Revision 0, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition IBR approved for table 6 to subpart DDDDD.

(12) SW-846-6010C, Inductively Coupled Plasma-Atomic Emission Spectrometry, Revision 3, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(13) SW-846-6020A, Inductively Coupled Plasma-Mass Spectrometry, Revision 1, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(14) SW-846-7060A, Arsenic (Atomic Absorption, Furnace Technique), Revision 1, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(15) SW-846-7740, Selenium (Atomic Absorption, Furnace Technique), Revision 0, September 1986, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(16) SW-846-9056, Determination of Inorganic Anions by Ion Chromatography, Revision 1, February 2007, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(17) SW-846-9076, Test Method for Total Chlorine in New and Used Petroleum Products by Oxidative Combustion and Microcoulometry, Revision 0, September 1994, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(18) SW-846-9250, Chloride (Colorimetric, Automated Ferricyanide AAI), Revision 0, September 1986, in EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for table 6 to subpart DDDDD.

(19) Method 200.8, Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma—Mass Spectrometry, Revision 5.4, 1994, IBR approved for table 6 to subpart DDDDD.

(20) Method 1631 Revision E, Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Absorption Fluorescence Spectrometry, Revision E, EPA-821-R-02-019, August 2002, IBR approved for table 6 to subpart DDDDD.

(m) International Standards Organization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, <http://www.iso.org/iso/home.htm>.

(1) ISO 6978-1:2003(E), Natural Gas—Determination of Mercury—Part 1: Sampling of Mercury by Chemisorption on Iodine, First edition, October 15, 2003, IBR approved for table 6 to subpart DDDDD.

(2) ISO 6978-2:2003(E), Natural gas—Determination of Mercury—Part 2: Sampling of Mercury by Amalgamation on Gold/Platinum Alloy, First edition, October 15, 2003, IBR approved for table 6 to subpart DDDDD.

(n) National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI), P.O. Box 133318, Research Triangle Park, NC 27709-3318 or at <http://www.ncasi.org>.

(1) NCASI Method DI/MEOH-94.03, Methanol in Process Liquids and Wastewaters by GC/FID, Issued May

2000, IBR approved for §§ 63.457 and 63.459.

(2) NCASI Method CI/WP-98.01, Chilled Impinger Method For Use At Wood Products Mills to Measure Formaldehyde, Methanol, and Phenol, 1998, Methods Manual, IBR approved for table 4 to subpart DDDD.

(3) NCASI Method DI/HAPS-99.01, Selected HAPs In Condensates by GC/FID, Issued February 2000, IBR approved for § 63.459(b).

(4) NCASI Method IM/CAN/WP-99.02, Impinger/Canister Source Sampling Method for Selected HAPs and Other Compounds at Wood Products Facilities, January 2004, Methods Manual, IBR approved for table 4 to subpart DDDD.

(5) NCASI Method ISS/FP A105.01, Impinger Source Sampling Method for Selected Aldehydes, Ketones, and Polar Compounds, December 2005, Methods Manual, IBR approved for table 4 to subpart DDDD.

(o) National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, (703) 605-6000 or (800) 553-6847; or for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512-1800.

(1) Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices 1998, IBR approved for § 63.1303(e).

(2) "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition. (A suffix of "A" in the method number indicates revision one (the method has been revised once). A suffix of "B" in the method number indicates revision two (the method has been revised twice).

(i) Method 0023A, "Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofuran Emissions from Stationary Sources," dated December 1996, IBR approved for § 63.1208(b).

(ii) Method 9071B, "n-Hexane Extractable Material (HEM) for Sludge, Sediment, and Solid Samples," dated April 1998, IBR approved for § 63.7824(e).

(iii) Method 9095A, "Paint Filter Liquids Test," dated December 1996, IBR approved for §§ 63.7700(b) and 63.7765.

(iv) Method 9095B, "Paint Filter Liquids Test," (revision 2), dated November 2004, IBR approved for the definition of "Free organic liquids" in §§ 63.10692, 63.10885(a), and the definition of "Free liquids" in § 63.10906.

(v) SW-846 74741B, Revision 2, "Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique)," February 2007, IBR approved for § 63.11647(f).

(3) National Institute of Occupational Safety and Health (NIOSH) test method compendium, "NIOSH Manual of Analytical Methods," NIOSH publication no. 94-113, Fourth Edition, August 15, 1994.

(i) NIOSH Method 2010, "Amines, Aliphatic," Issue 2, August 15, 1994, IBR approved for § 63.7732(g).

(ii) [Reserved]

(p) North American Electric Reliability Corporation, 1325 G Street, NW., Suite 600, Washington, DC 20005-3801, <http://www.nerc.com>, http://www.nerc.com/files/EOP0002-3_1.pdf.

(1) North American Electric Reliability Corporation Reliability Standard EOP-002-3, Capacity and Energy Emergencies, adopted August 5, 2010, IBR approved for § 63.6640(f).

(2) [Reserved]

(q) Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Norcross, GA 30092, (800) 332-8686, <http://www.tappi.org>.

(1) TAPPI T 266, Determination of Sodium, Calcium, Copper, Iron, and Manganese in Pulp and Paper by Atomic Absorption Spectroscopy (Reaffirmation of T 266 om-02), Draft No. 2, July 2006, IBR approved for table 6 to subpart DDDDD.

(2) [Reserved]

(r) Texas Commission on Environmental Quality (TCEQ) Library, Post Office Box 13087, Austin, Texas 78711-3087, telephone number (512) 239-0028, http://www.tceq.state.tx.us/assets/public/implementation/air/sip/sipdocs/2002-12-HGB/02046sipapp_ado.pdf.

(1) "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, January 31, 2003, IBR approved for §§ 63.654 and 63.11920.

(2) [Reserved]

Subpart G—[Amended]

■ 43. Amend § 63.144 by adding paragraphs (b)(5)(i)(G) and (H) to read as follows:

§ 63.144 Process wastewater provisions—test methods and procedures for determining applicability and Group 1/ Group 2 determinations (determining which wastewater streams require control).

* * * * *

(b) * * *

(5) * * *

(i) * * *

(G) *Method 8260B*. Use procedures specified in Method 8260B in the SW-846 Compendium of Methods.

(H) *Method 316*. Use Method 316 to determine formaldehyde concentration.

* * * * *

Subpart N—[Amended]

■ 44. Amend § 63.344 by adding paragraph (c)(5) to read as follows:

§ 63.344 Performance test requirements and test methods.

* * * * *

(c) * * *

(5) The South Coast Air Quality Management District (SCAQMD) Method 205.1 (which is available by contacting the South Coast AQMD, 21865 Copley Dr, Diamond Bar, CA 91765) may be used to determine the total chromium concentration from hard and decorative chromium electroplating tanks and chromium anodizing tanks.

* * * * *

Subpart O—[Amended]

■ 45. Amend § 63.364 by revising paragraph (e) to read as follows:

§ 63.364 Monitoring requirements.

* * * * *

(e) Measure and record once per hour the ethylene oxide concentration at the outlet to the atmosphere after any control device according to the procedures specified in § 63.365(c)(1). The owner or operator shall compute and record a 24-hour average daily. The owner or operator will install, calibrate, operate, and maintain a monitor consistent with the requirements of performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, to measure ethylene oxide. The daily calibration requirements of section 7.2 of PS-9 or Section 13.1 of PS-8 are required only on days when ethylene oxide emissions are vented to the control device.

* * * * *

■ 46. Amend § 63.365 by revising the introductory text of paragraph (b) to read as follows:

§ 63.365 Test methods and procedures.

* * * * *

(b) *Efficiency at the sterilization chamber vent*. California Air Resources Board (CARB) Method 431 or the following procedures shall be used to determine the efficiency of all types of control devices used to comply with § 63.362(c), sterilization chamber vent standard.

* * * * *

Subpart Y—[Amended]

■ 47. Amend § 63.565 by revising paragraphs (d)(5), (8), and (10) and (g) to read as follows:

§ 63.565 Test methods and procedures.

* * * * *

(d) * * *

(5) *Recovery devices*. The average VOC concentration in the vent upstream and downstream of the control device shall be determined using Method 25A or 25B of appendix A-7 to part 60 of this chapter for recovery devices. The average VOC concentration shall correspond to the volume measurement by taking into account the sampling system response time.

* * * * *

(8) Where Method 25, 25A, or 25B is used to measure the percent reduction in VOC, the percent reduction across the combustion or recovery device shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100\%)$$

Where:

R = control efficiency of control device, percent.

E_i = mass flow rate of VOC at the inlet to the combustion or recovery device as calculated under paragraph (c)(7) of this section, kg/hr.

E_o = mass flow rate of VOC at the outlet of the combustion or recovery device, as calculated under paragraph (c)(7) of this section, kg/hr.

* * * * *

(10) Use of methods other than Method 25, 25A, or 25B shall be validated pursuant to Method 301 of appendix A to part 63 of this chapter.

* * * * *

(g) *Baseline outlet VOC concentration*. The procedures in this paragraph shall be used to determine the outlet VOC concentration required in § 63.563(b)(4), (6), (7), and (8) for combustion devices except flare, carbon adsorbers, condenser/refrigeration units, and absorbers, respectively, and to monitor the VOC concentration as required in § 63.564(e), (g), (h), and (i). The owner or operator shall use the procedures outlined in Method 25A or 25B. For the baseline VOC concentration, the arithmetic average of the outlet VOC concentration from three test runs from paragraph (d) of this section shall be calculated for the control device. The VOC concentration shall be measured at least every 15 minutes. Compliance testing of VOC CEMS shall be performed using PS 8.

* * * * *

Subpart GG—[Amended]

- 48. Amend § 63.750 by revising paragraph (o) to read as follows:

§ 63.750 Test methods and procedures.

* * * * *

(o) *Inorganic HAP emissions—dry particulate filter certification requirements.* Dry particulate filters used to comply with § 63.745(g)(2) or § 63.746(b)(4) must be certified by the filter manufacturer or distributor, paint/depainting booth supplier, and/or the facility owner or operator using method 319 in appendix A of this part, to meet or exceed the efficiency data points found in Tables 1 and 2, or 3 and 4 of § 63.745 for existing or new sources respectively.

Subpart GGG—[Amended]

- 49. Amend § 63.1251 by revising the definition of “Process vent” to read as follows:

§ 63.1251 Definitions.

* * * * *

Process vent means a vent from a unit operation or vents from multiple unit operations within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the

potential to be, released to the atmosphere. Examples of process vents include, but are not limited to, vents on condensers used for product recovery, bottom receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Emission streams that are undiluted and uncontrolled containing less than 50 ppmv HAP, as determined through process knowledge that no HAP are present in the emission stream or using an engineering assessment as discussed in § 63.1257(d)(2)(ii); test data using Method 18 of 40 CFR part 60, appendix A–6; Method 320 of 40 CFR part 63; or any other test method that has been validated according to the procedures in Method 301 of appendix A of this part, are not considered process vents. Process vents do not include vents on storage tanks regulated under § 63.1253, vents on wastewater emission sources regulated under § 63.1256, or pieces of equipment regulated under § 63.1255.

* * * * *

Subpart RRR—[Amended]

- 50. Amend § 63.1511 by revising paragraph (c)(9) as to read follows:

§ 63.1511 Performance test/compliance demonstration general requirements.

* * * * *

(c) * * *

(9) Method 26A for the concentration of HCl. Where a lime-injected fabric filter is used as the control device to comply with the 90 percent reduction standard, the owner or operator must measure the fabric filter inlet concentration of HCl at a point before lime is introduced to the system. Method 26 may be used in place of Method 26A where it can be demonstrated that there are no water droplets in the emission stream. This can be demonstrated by showing that the vapor pressure of water in the emission stream that you are testing is less than the equilibrium vapor pressure of water at the emission stream temperature, and by certifying that the emission stream is not controlled by a wet scrubber.

* * * * *

Subpart CCCC—[Amended]

- 51. Revise Table 2 to subpart CCCC to read as follows:

As stated in § 63.2161, if you demonstrate compliance by monitoring brew ethanol, you must comply with the requirements for performance tests in the following table:

TABLE 2 TO SUBPART CCCC OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS
[Brew Ethanol Monitoring Only]

For each fed-batch fermenter for which compliance is determined by monitoring brew ethanol concentration and calculating VOC concentration in the fermenter exhaust according to the procedures in § 63.2161, you must . . .	Using . . .	According to the following requirements . . .
1. Measure VOC as propane	Method 25A*, or an alternative validated by EPA Method 301* and approved by the Administrator.	You must measure the VOC concentration in the fermenter exhaust at any point prior to the dilution of the exhaust stream.

* EPA Test Methods found in Appendix A of 40 CFR part 60.

Subpart UUUU—[Amended]

- 52. Revise Table 4 to subpart UUUU to read as follows:

As required in §§ 63.5530(b) and 63.5535(a), (b), (g)(1), and (h)(1), you must conduct performance tests, other initial compliance demonstrations, and

CEMS performance evaluations and establish operating limits according to the requirements in the following table:

TABLE 4 TO SUBPART UUUU OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS

For . . .	at . . .	you must . . .	using . . .	according to the following requirements . . .
1. the sum of all process vents.	a. each existing or new affected source.	i. select sampling port's location and the number of traverse points; ii. determine velocity and volumetric flow rate;	EPA Method 1 or 1A in appendix A to 40 CFR § 63.7(d)(1)(i); EPA Method 2, 2A, 2C, 2D, 2F, or 2G in appendices A–1 and A–2 to part 60 of this chapter;	sampling sites must be located at the inlet and outlet to each control device; you may use EPA Method 2A, 2C, 2D, 2F, or 2G as an alternative to using EPA Method 2, as appropriate;

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

For	at	you must . . .	using . . .	according to the following requirements . . .
2. the sum of all viscose process vents.	a. each existing or new viscose process source.	iii. conduct gas analysis; and, iv. measure moisture content of the stack gas. i. measure total sulfide emissions.	(1) EPA Method 3, 3A, or 3B in appendix A-2 to part 60 of this chapter; or, (2) ASME PTC 19.10-1981—Part 10; and, EPA Method 4 in appendix A-3 to part 60 of this chapter. (1) EPA Method 15 in appendix A-5 to part 60 of this chapter; or (2) carbon disulfide and/or hydrogen sulfide CEMS, as applicable;	you may use EPA Method 3A or 3B as an alternative to using EPA Method 3; or, you may use ASME PTC 19.10-1981—Part 10 (available for purchase from Three Park Avenue, New York, NY 10016-5990) as an alternative to using EPA Method 3B. (a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you must conduct testing of emissions from continuous viscose process vents and combinations of batch and continuous viscose process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (c) you must conduct testing of emissions from batch viscose process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (d) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration; or (a) you must measure emissions at the inlet and outlet of each control device using CEMS; (b) you must install, operate, and maintain the CEMS according to the applicable performance specification (PS-7, PS-8, PS-9, or PS-15) of 40 CFR part 60, appendix B; and (c) you must collect CEMS emissions data at the inlet and outlet of each control device during the period of the initial compliance demonstration and determine the CEMS operating limit during the period of the initial compliance demonstration.
3. the sum of all solvent coating process vents.	a. each existing or new cellophane operation.	i. measure toluene emissions.	(1) EPA Method 18 in appendix A-6 to part 60 of this chapter, or Method 320 in appendix A to part 63, or	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 18 or 320 to determine the control efficiency of any control device for organic compounds; for a combustion device, you must use only HAP that are present in the inlet to the control device to characterize the percent reduction across the combustion device; (c) you must conduct testing of emissions from continuous solvent coating process vents and combinations of batch and continuous solvent coating process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535;

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

For . . .	all . . .	you must	using	according to the following requirements . . .
			(2) ASTM D6420-99	(d) you must conduct testing of emissions from batch solvent coating process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the initial compliance demonstration; or (a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use ASTM D6420-99 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 18 only where: the target compound(s) are those listed in Section 1.1 of ASTM D6420-99; and the target concentration is between 150 parts per billion by volume (ppbv) and 100 ppmv; for target compound(s) not listed in Section 1.1 of ASTM D6420-99, but potentially detected by mass spectrometry, the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble; and for target compound(s) not listed in Section 1.1 of ASTM D6420-99 and not amenable to detection by mass spectrometry, ASTM D6420-99 does not apply; (c) you must conduct testing of emissions from continuous solvent coating process vents and combinations of batch and continuous solvent coating process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch solvent coating process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and, (e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration.
4. the sum of all cellulose ether process vents.	a. each existing or new cellulose ether operation.	i. measure total organic HAP emissions.	(1) EPA Method 18 in appendix A-6 to part 60 of this chapter or Method 320 in appendix A to part 63, or	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use EPA Method 18 or 320 to determine the control efficiency of any control device for organic compounds; for a combustion device, you must use only HAP that are present in the inlet to the control device to characterize the percent reduction across the combustion device;

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

For . . .	at . . .	you must	using	according to the following requirements . . .
				(c) you must conduct testing of emissions from continuous cellulose ether process vents and combinations of batch and continuous cellulose ether process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch cellulose ether process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial performance test and determine the CPMS operating limit during the period of the initial performance test;
			(2) ASTM D6420–99 . . .	(a) you must conduct testing of emissions at the inlet and outlet of each control device; (b) you may use ASTM D6420–99 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 18 only where: the target compound(s) are those listed in Section 1.1 of ASTM D6420–99; and the target concentration is between 150 ppbv and 100 ppmv; for target compound(s) not listed in Section 1.1 of ASTM D6420–99, but potentially detected by mass spectrometry, the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble; and for target compound(s) not listed in Section 1.1 of ASTM D6420–99 and not amenable to detection by mass spectrometry, ASTM D6420–99 does not apply; target concentration is between 150 ppbv and 100 ppmv for target compound(s). (c) you must conduct testing of emissions from continuous cellulose ether process vents and combinations of batch and continuous cellulose ether process vents at normal operating conditions, as specified in §§ 63.7(e)(1) and 63.5535; (d) you must conduct testing of emissions from batch cellulose ether process vents as specified in § 63.490(c), except that the emission reductions required for process vents under this subpart supersede the emission reductions required for process vents under subpart U of this part; and (e) you must collect CPMS data during the period of the initial performance test and determine the CPMS operating limit during the period of the initial performance test.
			(3) EPA Method 25 in appendix A–7 to part 60 of this chapter, or	(a) you must conduct testing of emissions at the inlet and outlet of each control device;

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

For . . .	at . . .	you must . . .	using . . .	according to the following requirements . . .
0. the sum of all process vents controlled using a flare.	a. each existing or new affected source.	i. measure visible emissions.	(1) EPA Method 22 in appendix A-7 to part 60 of this chapter.	(e) you must collect CPMS data during the period of the initial compliance demonstration and determine the CPMS operating limit during the period of the initial compliance demonstration.
7. equipment leaks	a. each existing or new cellulose ether operation.	i. measure leak rate	(1) applicable equipment leak test methods in § 63.180; or (2) applicable equipment leak test methods in § 63.1023	(a) you must conduct the flare visible emissions test according to § 63.11(b). (a) you must follow all requirements for the applicable equipment leak test methods in § 63.180; or (a) you must follow all requirements for the applicable equipment leak test methods in § 63.1023.
8. all sources of wastewater emissions.	a. each existing or new cellulose ether operation.	i. measure wastewater HAP emissions.	(1) applicable wastewater test methods and procedures in §§ 63.144 and 63.145; or (2) applicable wastewater test methods and procedures in §§ 63.144 and 63.145, using ASTM D5790-95 as an alternative to EPA Method 624 in appendix A to part 163 of this chapter.	(a) You must follow all requirements for the applicable wastewater test methods and procedures in §§ 63.144 and 63.145; or (a) you must follow all requirements for the applicable waste water test methods and procedures in §§ 63.144 and 63.145, except that you may use ASTM D5790-95 (available for purchase from at least one of the following addresses: 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106) as an alternative to EPA Method 624, under the condition that this ASTM method be used with the sampling procedures of EPA Method 25D or an equivalent method.
9. any emission point	a. each existing or new affected source using a CEMS to demonstrate compliance.	i. conduct a CEMS performance evaluation.	(1) applicable requirements in § 63.8 and applicable performance specification (PS-7, PS-8, PS-9, or PS-15) in appendix B to part 60 of this chapter.	(a) you must conduct the CEMS performance evaluation during the period of the initial compliance demonstration according to the applicable requirements in § 63.8 and the applicable performance specification (PS-7, PS-8, PS-9, or PS-15) of 40 CFR part 60, appendix B; (b) you must install, operate, and maintain the CEMS according to the applicable performance specification (PS-7, PS-8, PS-9, or PS-15) of 40 CFR part 60, appendix B; and (c) you must collect CEMS emissions data at the inlet and outlet of each control device during the period of the initial compliance demonstration and determine the CEMS operating limit during the period of the initial compliance demonstration.

Subpart ZZZZ—[Amended]

■ 53. Revise Table 4 to subpart ZZZZ to read as follows:

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:

TABLE 4 TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR PERFORMANCE TESTS

For each	Complying with the requirements 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 ii. Measure the O₂ at the inlet and outlet of the control device; and iii. Measure the CO at the inlet and the outlet of the control device.	 (1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM Method D6522-00 (Reapproved 2005)^{a,c} (heated probe not necessary). (1) ASTM D6522-00 (Reapproved 2005)^{a,b,c} (heated probe not necessary) or Method 10 of 40 CFR part 60, appendix A-4.	(a) For CO and O₂ 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. (b) Measurements to determine O₂ must be made at the same time as the measurements for CO concentration. (c) The CO concentration must be at 15 percent O₂, dry basis.
2. 4SRB stationary RICE.	a. reduce formaldehyde emissions.	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and ii. Measure O₂ at the inlet and outlet of the control device; and iii. Measure moisture content 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 Method D6522-00 (Reapproved 2005)^a (heated probe not necessary). (1) Method 4 of 40 CFR part 60, appendix A-3, or Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03^a.	(a) For formaldehyde, O₂, 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. (a) Measurements to determine O₂ concentration must be made at the same time as the measurements for formaldehyde or THC concentration. (a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.

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

For each	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
3. Stationary RICE . . .	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust.	iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device.	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03 ^a , 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.	(a) 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.	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A–7.	(a) 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 Method D6522–00 (Re-approved 2005) ^a (heated probe not necessary).	(a) 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; and	(1) Method 4 of 40 CFR part 60, appendix A–3, or Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 ^a .	(a) 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	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03 ^a , 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.	(a) 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.

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

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.	(1) Method 10 of 40 CFR part 60, appendix A-4, ASTM Method D6522-00 (2005) ^{a,c} , Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03 ^a .	(a) 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.

^a You may also use Methods 3A and 10 as options to ASTM-D6522-00 (2005). You may obtain a copy of ASTM-D6522-00 (2005) 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.

^b 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.

■ 54. Amend appendix A to part 63 to read as follows:

■ a. By revising Method 306, sections 2.2.1 and 6.1.4, and the Note to section 8.0.

■ b. By revising Method 306A, section 8.2.

■ c. By revising Method 308, section 10.1.3.

■ d. By amending Method 315 as follows:

■ i. By revising section 6.1.1.

■ ii. By redesignating section 8.11 as section 8.1.

■ iii. By revising newly designated section 8.1.

■ iv. By revising section 10.5.

■ e. By revising Method 316, section 10.5.

■ f. By revising Method 321, the definition for the term "DP" in section 9.3.1.

Appendix A to Part 63—Test Methods Pollutant Measurement Methods From Various Waste Media

* * * * *

Method 306—Determination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations—Isokinetic Method

* * * * *

2.2.1 Total chromium samples with high chromium concentrations (≥ 35 µg/L) may be analyzed using inductively coupled plasma emission spectrometry (ICP) at 267.72 nm. Note: The ICP analysis is applicable for this method only when the solution analyzed has a Cr concentration greater than or equal to 35 µg/L or five times the method detection limit as determined according to appendix B in 40 CFR part 136. Similarly, inductively coupled plasma-mass spectrometry (ICP-MS) may be used for total chromium analysis provided the procedures for ICP-MS analysis described in Method 6020 or 6020A (EPA Office of Solid Waste, publication SW-846) are followed.

* * * * *

6.1.4 Operating and maintenance procedures for the sampling train are described in APTD-0576 of Method 5. Users

should read the APTD-0576 document and adopt the outlined procedures. Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

8.0 Sample Collection, Preservation, Holding Times, Storage, and Transport

Note: Prior to sample collection, consideration should be given to the type of analysis (Cr⁺⁶ or total Cr) that will be performed. Which analysis option(s) will be performed will determine which sample recovery and storage procedures will be required to process the sample.

* * * * *

Method 306A—Determination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations

* * * * *

8.2 Sample Recovery. After the train has been transferred to the sample recovery area, disconnect the tubing that connects the jar/impingers. The tester shall select either the total Cr or Cr⁺⁶ sample recovery option. Samples to be analyzed for both total Cr and Cr⁺⁶ shall be recovered using the Cr⁺⁶ sample option (Section 8.2.2). Note: Collect a reagent blank sample for each of the total Cr or the Cr⁺⁶ analytical options. If both analyses (Cr and Cr⁺⁶) are to be conducted on the samples, collect separate reagent blanks for each analysis. Also, since particulate matter is not usually present at chromium electroplating and/or chromium anodizing operations, it is not necessary to filter the Cr⁺⁶ samples unless there is observed sediment in the collected solutions. If it is necessary to filter the Cr⁺⁶ solutions, please refer to Method 0061, Determination of Hexavalent Chromium Emissions from Stationary Sources, Section 7.4, Sample Preparation in SW-846 (see Reference 1).

* * * * *

Method 308—Procedure for Determination of Methanol Emission From Stationary Sources

* * * * *

10.1.3 Temperature Sensors. Calibrate against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

Method 315—Determination of Particulate and Methylene Chloride Extractable Matter (MCEM) From Selected Sources at Primary Aluminum Production Facilities

* * * * *

6.1.1 Sampling train. A schematic of the sampling train used in this method is shown in Figure 5-1, Method 5, 40 CFR part 60, appendix A-3. Complete construction details are given in APTD-0581 (Reference 2 in section 17.0 of this method); commercial models of this train are also available. For changes from APTD-0581 and for allowable modifications of the train shown in Figure 5-1, Method 5, 40 CFR part 60, appendix A-3, see the following subsections. Note: The operating and maintenance procedures for the sampling train are described in APTD-0576 (Reference 3 in section 17.0 of this method). Since correct usage is important in obtaining valid results, all users should read APTD-0576 and adopt the operating and maintenance procedures outlined in it, unless otherwise specified herein.

Alternative mercury-free thermometers may be used if the thermometers are, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application. The use of grease for sealing sampling train components is not recommended because many greases are soluble in methylene chloride. The sampling train consists of the following components:

* * * * *

8.1 Pretest preparation. It is suggested that sampling equipment be maintained according to the procedures described in APTD-0576. Alternative mercury-free thermometers may be used if the thermometers are at a minimum equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

10.5 Temperature sensors. Use the procedure in Section 10.3 of Method 2, 40 CFR part 60, appendix A-1 to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application.

* * * * *

Method 316—Sampling and Analysis for Formaldehyde Emissions From Stationary Sources in the Mineral Wool and Wool Fiberglass Industries

* * * * *

10.5 Temperature gauges: Use the procedure in Section 4.3 of EPA Method 2 to calibrate in-stack temperature gauges. Dial thermometers, such as are used for the dry gas meter and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An alternative mercury-free thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the

specific temperature measurement application.

* * * * *

Test Method 321—Measurement of Gaseous Hydrogen Chloride Emissions at Portland Cement Kilns by Fourier Transform Infrared (FTIR) Spectroscopy

* * * * *

9.3.1 * * *

DF = Dilution Factor (Total flow/Spike flow).
Total flow = spike flow plus effluent flow.

* * * * *

[FR Doc. 2014-02704 Filed 2-26-14; 8:45 am]
BILLING CODE 6560-50-P

(i) * * *

(B) * * *

(12) Previously approved on October 4, 1994 in paragraph (c)(184)(i)(B)(4) of this section and now deleted without replacement, for the Antelope Valley area only, Antelope Valley Rule 1174, previously South Coast Rule 1174. South Coast Rule 1174 remains in effect for the South Coast area.

* * * * *

(428) * * *

(i) * * *

(C) Mojave Desert Air Quality Management District.

(1) Rule 1113, "Architectural Coatings," amended on April 23, 2012.

(D) South Coast Air Quality Management District.

(1) Rule 1177, "Liquefied Petroleum Gas Transfer and Dispensing," adopted on June 1, 2012.

(429) * * *

(i) * * *

(C) Monterey Bay Unified Air Pollution Control District.

(1) Rule 426, "Architectural Coatings," amended on August 15, 2012.

* * * * *

[FR Doc. 2013-30861 Filed 1-2-14; 8:45 am]

BILLING CODE 5560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2011-0344; FRL-9904-38-OAR]

RIN 2060-AR66

National Emissions Standards for Hazardous Air Pollutants from Secondary Lead Smelting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: The Environmental Protection Agency (EPA) is taking direct final action to promulgate amendments to a final rule that revised national emission standards for hazardous air pollutants for existing and new secondary lead smelters. The final rule was published on January 5, 2012. This direct final action amends certain regulatory text to clarify compliance dates. Additionally, we are making amendments to clarify certain provisions in the 2012 final rule related to monitoring of negative pressure in total enclosures. This action also corrects typographical errors in a table listing congeners of dioxins and furans and the testing requirements for total hydrocarbons.

DATES: This rule is effective on March 4, 2014 without further notice, unless the EPA receives adverse comment by February 3, 2014. If we receive adverse comment, we will publish a timely withdrawal in the **Federal Register** informing the public that this rule, or relevant provisions of this rule, will not take effect.

ADDRESSES: You may submit comments, identified by Docket ID Number EPA-HQ-OAR-2011-0344, by one of the following methods:

- <http://www.regulations.gov>: Follow the online instructions for submitting comments.

- **Email:** a-and-r-docket@epa.gov, Attention Docket ID Number EPA-HQ-OAR-2011-0344.

- **Fax:** (202) 566-9744, Attention Docket ID Number EPA-HQ-OAR-2011-0344.

- **Mail:** U.S. Postal Service, send comments to: EPA Docket Center, EPA West (Air Docket), Attention Docket ID Number EPA-HQ-OAR-2011-0344, U.S. Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include a total of two copies.

- **Hand Delivery:** U.S. Environmental Protection Agency, EPA West (Air Docket), Room 3334, 1301 Constitution Ave., NW., Washington, DC 20004, Attention Docket ID Number EPA-HQ-OAR-2011-0344. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions. Direct your comments to Docket ID Number EPA-HQ-OAR-2011-0344. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and

made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters, any form of encryption, and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/dockets>.

Docket. The EPA has established a docket for this rulemaking under Docket ID Number EPA-HQ-OAR-2011-0344. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., 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. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave. 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 action, contact Mr. Nathan Topham, Metals and Inorganic Chemicals Group, Sector Policies and Programs Division (D243-02), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-0483; fax number: (919) 541-3207; and email address: topham.nathan@epa.gov.

SUPPLEMENTARY INFORMATION:

Organization of this Document. The following outline is provided to aid in locating information in the preamble.

- I. What is the background for the amendments?
- II. What are the changes to the final rule?
- III. Statutory and Executive Order Reviews
 - A. Executive Order 12866: Regulatory Planning and Review, and Executive Order 13563: Improving Regulation and Regulatory Review
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- 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

I. What is the background for the amendments?

On January 5, 2012 (77 FR 556), EPA published final amendments to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) From Secondary Lead Smelting. The EPA has subsequently determined, following discussions with affected parties, that the final rule warrants clarification in four areas.

The EPA inadvertently removed from 40 CFR part 63, subpart X the requirement for facilities constructed or reconstructed on or before May 19, 2011, to comply with the previous version of the NESHAP between promulgation of the January 5, 2012, amendments and the subsequent compliance date for existing sources, which is January 6, 2014. Since existing sources remain subject to the pre-existing standards until the compliance date for the January 2012 standards, the EPA is amending the rule to restore the deleted language.

The EPA received petitions for reconsideration of the final rule from the secondary lead smelting industry. One issue raised in the petitions relates to the table of dioxin and furan congeners contained in the regulatory text (Table 3 to Subpart X of Part 63—Toxic Equivalency Factors). This table included incorrect values for some dioxin toxic equivalency factors (TEF) and omitted some congeners. The EPA intended to use the 2005 World Health Organization (WHO) TEF in Table 3 to subpart X of part 63. See 76 FR 29051, “The TEQ emissions will be calculated using the toxic equivalency factors (TEF) outlined by the World Health Organization (WHO) in 2005 (available at Web site: <http://www.epa.gov/raf/hhtefguidance/>).”

Industry petitioners expressed concern that the agency changed one aspect of the emission standard for total hydrocarbons (THC) between proposing and finalizing the risk and technology review amendments for secondary lead

smelters. In the 2011 proposed rule, the total hydrocarbon standard for furnace charging process fugitive emissions that are not combined with furnace process emissions did not require correction to 4-percent carbon dioxide (CO₂). See the *Federal Register* at 76 FR 29072, May 19, 2011. In the 2012 final rule, this standard inadvertently included correction to 4-percent CO₂. See the *Federal Register* at 77 FR 582, January 5, 2012.

Finally, petitioners asked the EPA to clarify several monitoring provisions for total enclosures. Industry requested flexibility in defining the term “windward wall” when a total enclosure is not impacted by ambient wind. The regulatory text was unclear where to place monitors when ambient wind does not affect the total enclosure. Petitioners requested clarification in how to monitor enclosures that are divided into multiple areas all under negative pressure. Petitioners also asked the EPA to clarify that data from differential pressure monitors should be used to calculate 15-minute averages. Petitioners also stated that the EPA should clarify the meaning of “accuracy” in 40 CFR 63.548(k)(3).

The EPA is issuing the amendments as a direct final rule, without a prior proposal, because we view the revisions as noncontroversial and anticipate no adverse comment. The EPA never intended to remove the pre-January 2012 NESHAP from the Code of Federal Regulations (CFR), and no commenters suggested such an action. Additionally, the errors in Table 3 to subpart X of part 63 and the THC correction for furnace charging process fugitive emissions are simply typographical errors. The differential pressure monitoring clarifications do not alter the impacts of the 2012 final rule and simply clarify requirements from that rulemaking. The monitoring clarifications include the following: Clarifying the definition of windward wall; clarifying how to monitor pressure in situations where smaller enclosures are located within larger full enclosures; clarifying the averaging time for the monitoring; and clarifying the calibration requirements for the monitoring equipment. However, in the Proposed Rules section of this *Federal Register* issue, the EPA is also publishing a separate document that will serve as the proposal to amend the Secondary Lead Smelting NESHAP with the same amendments contained in this direct final action if significant adverse comments are submitted. The EPA will not institute a second comment period on this action. Any parties interested in commenting must do so at this time. The EPA will address all public

comments in any subsequent final rule based on the proposed rule. We will address other issues for which we have received requests for reconsideration in a separate proposal that will be published at a later date.

II. What are the changes to the final rule?

We are clarifying compliance requirements for existing sources for the period beginning January 5, 2012, and ending on the compliance date for existing sources established in the final rule published in the *Federal Register* at 77 FR 584, January 5, 2012. See 40 CFR 63.546(a). When the final rule was published in the *Federal Register*, the subpart was reprinted in its entirety to aid the public in locating and understanding the requirements for secondary lead smelters. This inadvertently removed the earlier version of 40 CFR part 63, subpart X from the CFR. This direct final rule clarifies that secondary lead smelters that commenced construction or reconstruction before May 19, 2011 (i.e., all sources existing as of that time, which includes sources classified as both existing and new under the previous rule), are still subject to the requirements of subpart X for new and existing sources that were effective prior to the January 5, 2012, amendments, and remain subject to those provisions until the compliance date for the January 5, 2012, amendments. Specifically, sources that were classified as new under the previous rule, (i.e., those which commenced construction after June 9, 1994) are subject to the previous rule’s new source standards (codified at former 40 CFR 63.543 through 63.545). Existing sources under the previous rule are subject to the previous rule’s existing source standards (codified at former 40 CFR 63.543 through 63.545). We have added paragraph (c) to 40 CFR 63.546 to correct this inadvertent error.

The EPA is also correcting typographical errors in Table 3 to subpart X of part 63. The table did not include all of the 2005 WHO TEF and had incorrect TEF values for some of the congeners included in the table. The EPA is not changing the emission standards for dioxins and furans from the 2012 final rule or using different congeners than we intended to include in the 2011 proposed rule or 2012 final rule. See 76 FR 29051, “The TEQ emissions will be calculated using the toxic equivalency factors (TEF) outlined by the World Health Organization (WHO) in 2005 (available at Web site: <http://www.epa.gov/raf/hhtefguidance/>).”

We are removing the CO₂ correction requirement that we inadvertently added to 40 CFR 63.543(f) in the final rule. We did not intend to make this change between the proposed and final rules, did not receive comments on this issue, and did not discuss it in the preamble to the final rule or supporting documents. The hoods that capture furnace charging process fugitive emissions draw a large amount of excess ambient air with very low concentrations of CO₂. Measured concentrations of THC would be inappropriately multiplied by 10 if CO₂ corrections were required for these sources. This amendment will not change the impacts of the 2012 final rule since we did not intend to make this change between the proposed and final rules.

We are also clarifying five parts of the rule establishing differential pressure monitoring requirements for negative pressure enclosures. These corrections are intended to clarify existing requirements and do not change the impacts of the final rule.

1. Placement of Pressure Monitors for Total Enclosures Inside Larger Structures

Industry petitioners requested that the EPA clarify how differential pressure monitors should be arranged within total enclosures when those enclosures exist within or as part of a larger structure. The EPA granted reconsideration in order to provide needed clarifications. In the 2012 final rule, differential pressure monitors are required on walls within a total enclosure to ensure negative pressure is maintained within the enclosure. See 40 CFR 63.548(k). The EPA included definitions for “windward” and “leeward” walls to determine which walls within a total enclosure should have differential pressure monitors. Windward and leeward walls were defined using prevailing ambient wind directions. See 40 CFR 63.542. Industry petitioners stated that some total enclosures are within larger structures that shield the total enclosure from impacts of ambient wind. Furthermore, we have determined there are significant technical difficulties associated with monitoring negative pressure in areas that open into other areas that are also under negative pressure. Therefore, as explained in more detail under item number 5 below, in situations where smaller enclosures are contained within larger total enclosed structures, we are clarifying that facilities only need to monitor pressure differential for the larger total enclosure. Furthermore, in this action,

we are clarifying that in such situations, owners or operators may choose which wall to define as the “windward wall” for placing differential pressure monitors. We are also adding regulatory text that allows a permit authority to approve an alternative location for the third monitor placed between the windward and leeward wall monitors. Industry commenters stated that irregularly shaped enclosures would make it difficult to determine where to place the monitor under the current requirements. This clarification will not adversely affect the quality or frequency of data collection from differential pressure monitors.

2. Averaging Time for Differential Pressure Monitoring Data

The 2012 final rule for secondary lead smelters requires differential pressure monitors in order to demonstrate continuous compliance with the requirements of 40 CFR 63.544(c)(1). Industry petitioners stated that the 2012 final rule creates uncertainty about how to handle data collected from differential pressure monitors. The 2012 final rule did not explicitly state how to use the data collected from the monitors, although the rule did incorporate 40 CFR 63.10(b)(2)(vii), which requires records of 15-minute averages of data collected from continuous monitoring systems. In this action, we are clarifying that the data collected from the continuous pressure monitors must be used to calculate 15-minute averages that are used to demonstrate compliance. This amendment does not alter the impacts of the 2012 final rule. Rather, it simply clarifies the existing requirements already included in the 2012 rule by explicitly stating the requirements previously referenced in the general provisions.

3. Differential Pressure Monitoring Device Accuracy

The 2012 final rule included a requirement for differential pressure monitors with “minimum accuracy of plus or minus 0.001 millimeters of mercury (0.0005 inches of water).” See 40 CFR 63.548(k)(3). Industry has expressed concerns that there are not monitors available with certified accuracy at the levels prescribed in the 2012 final rule. We included the accuracy requirement in the 2012 final rule to ensure that the differential pressure monitors display and record data with sufficient sensitivity to demonstrate compliance with the standard. Our goal was to require monitors that display and record data with sufficient significant figures, rather

than a specific certified accuracy level. We are clarifying this requirement in the regulatory text. We are changing the sensitivity requirement from 0.0005 inches of water to 0.001 inches of water. Industry commenters noted difficulty finding monitors with sufficient sensitivity to meet the original requirement. Monitors capable of recording data in increments of 0.001 inches of water are sufficient to determine compliance with the standard. This clarification will not have any impact on the cost or environmental impacts of the 2012 final rule or impact the quality or frequency of differential pressure data collection.

4. Calibration Schedule for Differential Pressure Monitors

We are amending the regulatory text to simplify requirements for calibrating differential pressure monitors. See 40 CFR 63.548(k)(5). We have changed the regulatory text to require calibration per manufacturer’s specifications rather than on a prescribed schedule. It has come to our attention that some manufacturers of differential pressure monitors do not require or recommend calibration as frequently as once per year. The amended requirements will ensure that monitors are calibrated properly without requiring adjustments more frequently than manufacturers recommend.

5. Monitoring Enclosures That Only Open Into Other Enclosures

We are adding regulatory text to address how negative pressure within total enclosures must be monitored when those enclosures only open into other totally enclosed process areas. If a source, or group of sources, is in a totally enclosed part of a building that only opens into other areas that are also totally enclosed under negative pressure, the source only needs to monitor differential pressure on the outermost walls of the enclosure that opens to areas that are not enclosed under negative pressure. This change ensures that facilities maintain negative pressure in structures housing process areas without unnecessary monitoring requirements. It is redundant to monitor negative pressure in process areas that open into other totally enclosed process areas under negative pressure. Additionally, it has come to our attention that there are technical difficulties associated with monitoring negative pressure in areas that open into other areas also under negative pressure. The modified regulatory text will ensure that monitors are able to function properly by specifying that monitors are not to be placed on walls with no

exposure to ambient pressure on either side of the wall.

We have not made any other changes to the final rule in this direct final action. We note that we are not re-proposing, reconsidering, or in any other way re-opening any other aspects of the final rule for comment through this direct final action.

III. 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" under the terms of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), and is, therefore, not subject to review under Executive Order 12866 and 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act

This action does not impose any new information collection burden. This action adds clarifications and corrections to the final standards. However, OMB has previously approved the information collection requirements contained in the existing regulation (40 CFR part 63, subpart X) under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.*, and has assigned OMB control number 2060-0296. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impact of this rule on small entities, small entity is defined as: (1) A small business as defined by Small Business Administration (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district, or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impact of this direct final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This final rule will not impose any requirements on small entities because it does not add any additional regulatory requirements and only clarifies the existing compliance requirements.

D. Unfunded Mandates Reform Act

This action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538 for State, local, or tribal governments or the private sector. The action imposes no enforceable duties on any state, local or tribal governments or the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments nor does it impose obligations upon them.

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, as specified in Executive Order 13132. This direct final rule primarily affects private industry, and does not impose significant economic costs on state or local governments. Thus, Executive Order 13132 does not apply to this action.

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

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effect 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

The EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks. This action simply clarifies certain requirements in the final rule and corrects typographical errors.

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

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113, 12(d) (15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. The VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by VCS bodies. NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This action does not involve technical standards. Therefore, EPA did not consider the use of any VCS.

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) establishes federal executive policy on environmental justice. Its main provision 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 and low-income populations in the United States.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This action merely corrects and clarifies existing requirements, it does not change any regulatory requirements.

K. Congressional Review Act

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 final rule and other required information to the United States Senate, the United States House of Representatives and the Comptroller General of the United States prior to publication of the direct final 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). The final rule will be effective on March 4, 2014.

List of Subjects for 40 CFR Part 63

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

Dated: December 20, 2013.

Gina McCarthy,
Administrator.

For the reasons stated in the preamble, part 63 of 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.*

- 2. Amend § 63.542 by revising the definition of "Windward wall" to read as follows:

§ 63.542 Definitions.

* * * * *

Windward wall means the exterior wall of a total enclosure that is most

impacted by the wind in its most prevailing direction determined by a wind rose using available data from the closest representative meteorological station. When openings into enclosures are not impacted by ambient wind due to the enclosure being part of a larger structure, the owner or operator may designate which wall of the enclosure to define as the windward wall.

- 3. Amend § 63.543 by revising paragraph (f) to read as follows:

§ 63.543 What are my standards for process vents?

* * * * *

(f) If you do not combine the furnace charging process fugitive emissions with the furnace process emissions, and discharge such emissions to the atmosphere through separate emissions points, you must maintain the total hydrocarbons concentration in the exhaust gas at or below 20 parts per million by volume, expressed as propane.

* * * * *

- 4. Amend § 63.544 by revising the first sentence of paragraph (c) introductory text and adding paragraph (c)(3) to read as follows:

§ 63.544 What are my total enclosure standards?

* * * * *

(c) You must construct and operate total enclosures for the sources listed in paragraph (a) of this section as specified in paragraphs (c)(1) through (3) of this section. * * *

* * * * *

(3) If areas that contain one or more sources listed in paragraphs (a)(1) through (9) of this section are enclosed within a larger building that also meets the definition of a total enclosure under § 63.542, the requirements of paragraphs (c)(1) and (2) shall be monitored pursuant to § 63.548(k) at only one leeward, one windward and one additional wall of the outermost portion of the larger totally enclosed building rather than each individual area within the building.

* * * * *

- 5. Amend § 63.546 by adding paragraph (c) to read as follows:

§ 63.546 Compliance dates.

* * * * *

(c) Until the date specified in 63.546(a), secondary lead smelters that commenced construction or reconstruction on or before May 19, 2011, must continue to demonstrate compliance with the requirements of this subpart, codified in 40 CFR 63.541 through 40 CFR 63.550, that were in

effect prior to the January 5, 2012, amendments. This means that secondary lead smelters that commenced construction or reconstruction on or before June 9, 1994, must continue to demonstrate compliance with existing source requirements of this subpart that were in effect prior to the January 5, 2012, amendments until the date specified in § 63.546(a). Secondary lead smelters that commenced construction or reconstruction after June 9, 1994, and on or before May 19, 2011, must continue to demonstrate compliance with new source requirements of this subpart that were in effect prior to the January 5, 2012, amendments until the date specified in § 63.546(a).

- 6. Amend § 63.548 by revising paragraphs (k)(1)(iii), (k)(3), (k)(4) and (k)(5) to read as follows:

§ 63.548 Monitoring requirements.

* * * * *

(k) * * *

(1) * * *

(iii) An exterior wall that connects the leeward and windward wall at a location defined by the intersection of a perpendicular line between a point on the connecting wall and a point on its furthest opposite exterior wall, and intersecting within plus or minus 10 meters of the midpoint of a straight line between the two other monitors specified. The midpoint monitor must not be located on the same wall as either of the other two monitors. If approved by the permitting authority, this third monitor may be placed in an alternative location on the midpoint wall or an exterior wall that is not the windward wall, leeward wall or midpoint wall.

* * * * *

(3) The digital differential pressure monitoring systems must be certified by the manufacturer to be capable of measuring and displaying negative pressure containing values in the range of 0.01 to 0.2 millimeters mercury (0.005 to 0.11 inches of water) and capable of recording data in increments of 0.002 millimeters of mercury (0.001 inches of water).

(4) You must equip each digital differential pressure monitoring system with a continuous recorder. To demonstrate compliance with the standard for differential pressure, you must maintain the pressure in total enclosures such that the average pressure in any 15-minute period does not fall below the level specified in § 63.544(c)(1). The 15-minute averages must include at least one reading per minute.

(5) You must calibrate each digital differential pressure monitoring system

in accordance with manufacturer's specifications.

* * * * *

■ 7. Section 63.550 is amended by revising paragraph (e)(10) to read as follows:

§ 63.550 Recordkeeping and reporting requirements.

* * * * *

(e) * * *

(10) Records of 15-minute periods when the pressure was not maintained as required in § 63.544(c) or power was lost to the continuous pressure monitoring system as required in § 63.548(k). Records of which wall is

chosen as the windward wall must be included in the records required by § 63.10(c) if a total enclosure located within a larger structure is not impacted by ambient wind.

* * * * *

■ 8. Amend Table 3 to Subpart X of Part 63—Toxic Equivalency Factors by revising to read as follows:

TABLE 3 TO SUBPART X OF PART 63—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.3
1,2,3,7,8-pentachlorinated dibenzofuran	0.03
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.0003

[FR Doc. 2013-31267 Filed 1-2-14; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 228

[EPA-R06-OW-2013-0221; FRL-9904-86]

Ocean Dumping Regulations: Atchafalaya-West Ocean Dredged Material Disposal Site Designation; Calcasieu, Sabine Neches, and Atchafalaya-East Site Corrections

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule and technical amendment.

SUMMARY: Pursuant to section 102(c) of the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA), the EPA today designates the Atchafalaya-West Ocean Disposal Site (ODMDS-West), located adjacent to and west of the Atchafalaya River Bar Channel (ARBC) of Louisiana as a permanent ocean dredged material disposal site (ODMDS). This designation will allow continued use of the site, which was previously designated a temporary site pursuant to MPRSA section 103(b).

In addition to the designation, the EPA now issues a technical amendment to correct seven typographical errors.

The designation of the Atchafalaya ODMDS-West disposal site does not by itself authorize the disposal of dredged material, but makes the site available for use for dredged material from the ARBC if no environmentally preferable, practicable alternative for managing that dredged material exists, and if analysis of the dredged material indicates that it is suitable for open-water disposal. This action is to designate adequate, environmentally-acceptable ocean disposal site capacity for suitable dredged material from the ARBC.

DATES: This final rule is effective on February 3, 2014.

ADDRESSES: The EPA established a docket for this action under Docket ID No. EPA-R06-OW-2013-0221. All documents in the docket are listed on the <http://www.regulations.gov> Web site. Publicly available docket materials are available either electronically through <http://www.regulations.gov> or in hard copy at the Marine & Coastal Section (6WQ-EC), Environmental Protection Agency, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202-2733. The file will be made available by appointment for public inspection in the Region 6 Freedom of Information

Act Review Room between the hours of 8:30 a.m. and 4:30 p.m. weekdays except for legal holidays. Contact the person listed in the **FOR FURTHER INFORMATION CONTACT** paragraph below to make an appointment. If possible, please make the appointment at least two working days in advance of your visit. There will be a 15 cent per page fee for making photocopies of documents. On the day of the visit, please check in at the EPA Region 6 reception area at 1445 Ross Avenue, Suite 700, Dallas, Texas.

FOR FURTHER INFORMATION CONTACT: Jessica Franks, Ph.D., Marine and Coastal Section (6WQ-EC), Environmental Protection Agency, Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202-2733, telephone (214) 665-8335, fax number (214) 665-6689; email address franks.jessica@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document wherever "we," "us," or "our" is used, we mean the EPA.

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