

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 63**

[FRL-6917-3]

RIN 2060-AG34

**National Emission Standards for Hazardous Air Pollutants: Surface Coating of Large Appliances****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Proposed rule.

**SUMMARY:** This action proposes national emission standards for hazardous air pollutants (NESHAP) for large appliance surface coating operations located at major sources of hazardous air pollutants (HAP). These proposed standards would implement section 112(d) of the Clean Air Act (CAA) by requiring these operations to meet HAP emission standards reflecting the application of the maximum achievable control technology (MACT). The HAP emitted by these operations include ethylbenzene, glycol ethers (including 2-butoxyethanol), hexane, methylene chloride, 4,4'-methylene diphenyl diisocyanate, methyl ethyl ketone, methyl isobutyl ketone, toluene, and xylene. Exposure to these substances has been demonstrated to cause adverse health effects such as irritation of the lung, eye, and mucus membranes, asthma, effects on the central nervous system, and cancer. In general, these findings have only been shown with concentrations higher than those typically in the ambient air. The adverse health effects associated with the exposure to these specific HAP are further described in the docket for this rulemaking. The proposed standards would reduce nationwide HAP emissions from major sources by approximately 45 percent.

**DATES:** *Comments.* Submit comments on or before February 20, 2001.

*Public Hearing.* If anyone contacts the EPA requesting to speak at a public hearing, they should do so by January 11, 2001. If requested, a public hearing will be held within approximately 30 days following publication of this notice in the **Federal Register**.

**ADDRESSES:** *Comments.* By U.S. Postal Service, send comments (in duplicate if possible) to: Air and Radiation Docket and Information Center (6102), Attention Docket Number A-97-41, U.S. EPA, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. In person or by courier, deliver comments (in duplicate if possible) to: Air and Radiation docket and Information

Center (6102), Attention Docket Number A-97-41, U.S. EPA, 401 M Street, SW, Room M-1500, Washington, DC 20460. The EPA requests a separate copy also be sent to the contact person listed in **FOR FURTHER INFORMATION CONTACT.**

*Public Hearing.* If a public hearing is held, it will be held at our Office of Administration auditorium in Research Triangle Park, North Carolina. You should contact Ms. Janet Eck, Coatings and Consumer Products Group, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-7946, to request to speak at a public hearing or to find out if a hearing will be held.

*Docket.* Docket No. A-97-41 contains supporting information used in developing the proposed standards. The docket is located at the U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460 in Room M-1500, Waterside Mall (ground floor), and may be inspected from 8:30 a.m. to 5:30 p.m., Monday through Friday, excluding legal holidays.

**FOR FURTHER INFORMATION CONTACT:** Dr. Mohamed Serageldin, Coatings and Consumer Products Group, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number (919) 541-2379; facsimile number (919) 541-5689; electronic mail (e-mail) address: serageldin.mohamed@epa.gov.

**SUPPLEMENTARY INFORMATION:**

*Comments.* Comments and data may be submitted by e-mail to: a-and-r-docket@epa.gov. Electronic comments must be submitted as an ASCII file to avoid the use of special characters and encryption problems and will also be accepted on disks in WordPerfect® version 5.1, 6.1, or Corel 8 file format. All comments and data submitted in electronic form must note the docket number: A-97-41. No confidential business information (CBI) should be submitted by e-mail. Electronic comments may be filed online at many Federal Depository Libraries.

Commenters wishing to submit proprietary information for consideration must clearly distinguish such information from other comments and clearly label it as CBI. Send submissions containing such proprietary information directly to the following address, and not to the public docket, to ensure that proprietary information is not inadvertently placed in the docket: Dr. Mohamed Serageldin, c/o OAQPS Document Control Officer (Room 740B), U.S. Environmental

Protection Agency, 411 W. Chapel Hill Street, Durham NC 27701. The EPA will disclose information identified as CBI only to the extent allowed by the procedures set forth in 40 CFR part 2. If no claim of confidentiality accompanies a submission when it is received by EPA, the information may be made available to the public without further notice to the commenter.

*Public Hearing.* Persons interested in presenting oral testimony or inquiring as to whether a hearing is to be held should contact Ms. Janet Eck, Coatings and Consumer Products Group, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number (919) 541-7946 at least 2 days in advance of the public hearing. Persons interested in attending the public hearing should also contact Ms. Eck to verify the time, date, and location of the hearing. The public hearing will provide interested parties the opportunity to present data, views, or arguments concerning these proposed emission standards.

*Docket.* The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is a dynamic file because material is added throughout the rulemaking process. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the proposed and promulgated standards and their preambles, the contents of the docket will serve as the record in the case of judicial review. (See section 307(d)(7)(A) of the CAA.) The regulatory text and other materials related to this rulemaking are available for review in the docket or copies may be mailed on request from the Air and Radiation Docket and Information Center by calling (202) 260-7548. A reasonable fee may be charged for copying docket materials.

*World Wide Web (WWW).* In addition to being available in the docket, an electronic copy of this proposed rule is also available on the WWW through the Technology Transfer Network (TTN). Following signature, a copy of the proposed rule will be posted 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. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541-5384.

*Regulated Entities.* The proposed source category definition includes facilities that apply coatings to large appliances or components of large appliances. In general, facilities that coat large appliances are covered under the Standard Industrial Classification

(SIC) and North American Industrial Classification System (NAICS) codes listed in the following table. However, facilities classified under other SIC or NAICS codes may be subject to the proposed standards if they meet the applicability criteria. Not all facilities

classified under the SIC and NAICS codes in the following table will be subject to the proposed standards because some of the classifications cover products outside the scope of the NESHAP for large appliances.

Product description	1987 SIC code	Equivalent 1997 NAICS code(s)	Equivalent 1997 NAICS product description
Household Cooking Equipment .....	3631	335221	Household Cooking Appliance Manufacturing.
Household Refrigerators and Home and Farm Freezers	3632	335222	Household Refrigerator and Home Freezer Manufacturing.
Household Laundry Equipment .....	3633	335224	Household Laundry Equipment Manufacturing.
Household Appliances; not elsewhere classified .....	3639	335228	Other Major Household Appliance Manufacturing.
Floor Waxing and Floor Polishing Machines .....	3639	335212	Household Vacuum Cleaner Manufacturing.
Air Conditioning and Warm Air Heating Equipment and Commercial Industrial Refrigeration Equipment.	3585	333415	Air Conditioning and Warm Air Heating Equipment and Commercial Industrial Refrigeration Equipment Manufacturing.
Motor Vehicle Air Conditioning .....	3585	336391	Motor Vehicle Air Conditioning Manufacturing.
Service Industry Machinery; not elsewhere classified ...	3589	333319	Other Commercial and Service Industry Machinery Manufacturing.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your coating operation is regulated by this action, you should examine the applicability criteria in § 63.4081 of the proposed rule.

If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

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

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  - G. Paperwork Reduction Act
  - H. National Technology Transfer and Advancement Act

**I. Background**

*A. What Is the Source of Authority for Development of NESHAP?*

Section 112 of the CAA requires us to list categories and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. The Large Appliance (Surface Coating) category of major sources was listed on July 16, 1992 (57 FR 31576) under the Surface Coating Processes industry

group. Major sources of HAP are those that emit or have the potential to emit equal to, or greater than, 10 tons per year (tpy) of any one HAP or 25 tpy of any combination of HAP.

*B. What Criteria Are Used in the Development of NESHAP?*

Section 112 of the CAA requires that we establish NESHAP for the control of HAP from both new and existing major sources. The CAA requires the NESHAP to reflect the maximum degree of reduction in emissions of HAP that is achievable. This level of control is commonly referred to as the MACT.

The MACT floor is the minimum control level allowed for NESHAP and is defined under section 112(d)(3) of the CAA. In essence, the MACT floor ensures that the standard is set at a level that assures that all major sources achieve the level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. 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 standards for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources).

In developing MACT, we also consider control options that are more stringent than the floor. 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.

*C. What Are the Health Effects Associated With HAP Emissions From the Surface Coating of Large Appliances?*

The HAP emitted from the surface coating of large appliances include ethylbenzene, glycol ethers (including 2-butoxyethanol), hexane, methylene chloride, 4,4'-methylene diphenyl diisocyanate, methyl ethyl ketone, methyl isobutyl ketone, toluene, and xylene. These compounds account for over 80 percent of the nationwide HAP emissions from this source category. The HAP that would be controlled with this proposed rule are associated with a variety of adverse health effects. These adverse health effects include chronic health disorders (e.g., irritation of the lung, eyes, and mucus membranes and effects on the central nervous system), and acute health disorders (e.g., lung irritation and congestion, alimentary effects such as nausea and vomiting, and effects on the central nervous system). The EPA has classified one of the HAP (methylene chloride) as a probable human carcinogen.

We do not have the type of current detailed data on each of the facilities covered by the emission standards for this source category, and the people living around the facilities, that would be necessary to conduct an analysis to determine the actual population exposures to the HAP emitted from these facilities and potential for resultant health effects. Therefore, we do not know the extent to which the adverse health effects described above occur in the populations surrounding these facilities. However, to the extent the adverse effects do occur, the proposed rule would reduce emissions and subsequent exposures.

## II. Summary of the Proposed Rule

*A. What Source Categories Are Affected by This Proposed rule?*

The proposed rule would apply to you if you own or operate a large appliance surface coating facility that is a major source, or is located at a major source, or is part of a major source of HAP emissions. We have defined a large appliance surface coating facility as any facility engaged in the surface coating of any large appliance part or product.

You would not be subject to the proposed rule if your large appliance surface coating facility is located at an area source. An area source of HAP is

any facility that has the potential to emit HAP but is not a major source. You may establish area source status by limiting the source's potential to emit HAP through appropriate mechanisms available through your permitting authority.

The source category does not include research or laboratory facilities or janitorial, building, and facility maintenance operations. The source category also does not include coating applications using handheld nonrefillable aerosol containers.

*B. What Is the Relationship to Other Rules?*

Affected sources subject to the proposed rule may also be subject to other rules. We specifically request comments on how monitoring, recordkeeping, and reporting requirements can be consolidated for sources that are subject to more than one rule.

*New Source Performance Standards—40 CFR Part 60, Subpart SS.* The new source performance standards (NSPS) for large appliances apply to facilities that apply organic coatings to large appliances and that began construction, reconstruction, or modification after October 27, 1982. The pollutants regulated are volatile organic compounds (VOC). Emissions of VOC are limited to 0.9 kilogram HAP per liter (kg HAP/liter) of coating solids applied (7.52 pounds per gallon (lbs/gal)), and the affected source is each individual coating operation.

The proposed rule differs from the NSPS in three ways. First, the affected source for the proposed rule is defined broadly as the collection of all coating operations and related activities and equipment at the facility, whereas the affected facility for the NSPS is defined narrowly as each individual coating operation. The broader definition of an affected source allows a facility's emissions to be combined for compliance purposes. Second, the proposed rule regulates organic HAP. While most organic HAP emitted from large appliance surface coating operations are VOC, some VOC are not listed as HAP, and, therefore, the NSPS regulates a broader range of pollutants than the proposed NESHAP.

Third, the HAP emission limitations in the proposed rule are based on the amount of coating solids used at the affected source. The VOC limitations in the NSPS are based on the amount of coating solids actually applied to the large appliances, which necessitates estimates of transfer efficiency in the compliance calculations.

Because of the differences between the two rules, compliance with either rule cannot be deemed compliance with the other. A large appliance surface coating operation that meets the applicability requirements of both rules must comply with both. Overlapping reporting, recordkeeping, and monitoring requirements may be resolved through your title V permit.

*Future national emission standards for the surface coating of miscellaneous metal parts and products.* Large appliances often contain parts, such as metal handles, hinges, and fasteners, that have a wider use beyond large appliances. The coating of such metal parts would be subject to the proposed rule if the coating takes place at a facility that coats other large appliance parts or products; otherwise, the coating operation would be subject to the future NESHAP for the surface coating of miscellaneous metal parts and products.

*Future national emission standards for the surface coating of plastic parts and products.* Plastic parts and products may be components (e.g., plastic handles) of large appliances. The coating of such plastic parts would be subject to the proposed rule if the coating takes place at a facility that coats other large appliance parts or products; otherwise, the coating operation would be subject to the future NESHAP for the surface coating of plastic parts and products.

*C. What Are the Primary Sources of Emissions and What Are the Emissions?*

*HAP Emission Sources.* Emissions from coating applications account for approximately 80 percent of the HAP emissions from large appliance surface coating operations. The remaining emissions are primarily from cleaning operations. In most cases, HAP emissions from mixing and storage are relatively small. The organic HAP emissions associated with coatings (the term "coatings" includes protective and decorative coatings as well as adhesives) occur at several points. Coatings are most often applied either by using a spray gun in a spray booth or by dipping the substrate in a tank containing the coating. In a spray booth, volatile components evaporate from the coating as it is applied to the part and from the overspray. The coated part then passes through an open (flash-off) area where additional volatiles evaporate from the coating. Finally, the coated part passes through a drying/curing oven, or is allowed to air dry, where the remaining volatiles are evaporated.

Organic HAP emissions also occur from the activities undertaken during cleaning operations, where solvent is

used to remove coating residue or other unwanted materials. Cleaning in this industry includes cleaning of spray guns and transfer lines (e.g., tubing or piping), tanks, and the interior of spray booths. Cleaning also includes applying solvents to manufactured parts prior to coating application and to equipment (e.g., surface coating operations, cleaning rollers, pumps, conveyors, etc.).

**Mixing and Storage.** Organic HAP emissions can also occur from displacement of organic vapor-laden air in containers used to store HAP solvents or to mix coatings containing HAP solvents. The displacement of vapor-laden air can occur during the filling of containers and can be caused by changes in temperature or barometric pressure, or by agitation during mixing.

**Organic HAP.** Available emission data collected during the development of the proposed NESHAP show that the primary organic HAP emitted from the surface coating of large appliances include xylene, glycol ethers, toluene, methylene diphenyl diisocyanate, and methyl ethyl ketone. These compounds account for approximately 82 percent of this category's nationwide organic HAP emissions. Other significant organic HAP identified include methyl isobutyl ketone, hexane, and methylene chloride.

**Inorganic HAP.** Based on information reported in survey responses during the development of the proposed NESHAP, inorganic HAP, including chromium, cobalt, lead, and manganese compounds, are components of some specialty coatings used by this source category. No inorganic HAP were reported in cleaning materials. Most of the inorganic HAP components remain as solids in the dry coating film on the parts being coated or are deposited onto the walls, floor, and grates of the spray booths in which they are applied. Some of the inorganic HAP particles are entrained in the spray booth exhaust air. Spray booths in the large appliance industry typically have either water curtains or dry filters to remove overspray particles. Therefore, inorganic HAP emission levels are expected to be very low, and have not been quantified.

#### *D. What Is the Affected Source?*

We define an affected source as a stationary source, a group of stationary sources, or part of a stationary source to which a specific emission standard applies. The proposed standards define the affected source as the collection of all operations associated with the surface coating of large appliances or parts of large appliances. These operations include preparation of a coating for application (e.g., mixing with thinners); surface preparation of

the large appliances or part; coating application and flash-off; drying and/or curing of applied coatings; cleaning of equipment used in surface coating; storage of coatings, thinners, and cleaning materials; and handling and conveyance of waste materials from the surface coating operations.

#### *E. What Are the Emission Limits, Operating Limits, and Other Standards?*

We are proposing standards that would limit HAP emissions from the surface coating of large appliances. The proposed standards include emission limits and operating limits.

**Emission Limits.** We are proposing to limit organic HAP emissions from each new and reconstructed affected source to no more than 0.022 kg HAP/liter of coating solids used (0.18 lb/gal) in each monthly compliance period. The proposed limit for each existing affected source is 0.13 kg HAP/liter used (1.1 lb/gal). You can choose from several compliance options in the proposed rule to achieve the emission limits. You could comply by applying materials (coatings, thinners, and cleaning materials) that meet the emission limits, either individually or collectively, during each monthly compliance period. You could also use a capture system and add-on control device to meet the emission limits. You could also comply by using a combination of both approaches.

**Operating Limits.** If you reduce emissions by using a capture system and add-on control device (other than a solvent recovery system for which you conduct a liquid-liquid material balance), the proposed operating limits would apply to you. These limits are site-specific parameter limits that you determine during the initial performance test of the system. For capture systems that are not permanent total enclosures, you would establish average volumetric flow rates or duct static pressure limits for each capture device (or enclosure) in each capture system. For capture systems that are permanent total enclosures, you would establish limits on average facial velocity or pressure drop across openings in the enclosure.

For oxidizers, you would monitor the combustion temperature (for thermal oxidizers) or the temperature immediately before and after the catalyst bed (for catalytic oxidizers). For carbon adsorbers for which you do not conduct a liquid-liquid material balance, you would monitor the carbon bed temperature and the amount of steam or nitrogen used to desorb the bed. For condensers, you would monitor

the outlet gas temperature from the condenser.

The site-specific parameter limits that you establish must reflect operation of the capture system and control devices during a performance test that demonstrates achievement of the emission limits during representative operating conditions.

**General Provisions.** The General Provisions (40 CFR part 63, subpart A) also would apply to you as indicated in the proposed rule. The General Provisions codify certain procedures and criteria for all 40 CFR part 63 NESHAP. The General Provisions contain administrative procedures, preconstruction review procedures for new sources, and procedures for conducting compliance-related activities such as notifications, reporting and recordkeeping, performance testing, and monitoring. The proposed rule refers to individual sections of the General Provisions to emphasize key sections that are relevant. However, unless specifically overridden in the proposed rule, all of the applicable General Provisions requirements would apply to you.

#### *F. What Are the Testing and Initial Compliance Requirements?*

**Compliance Dates.** Existing affected sources would have to be in compliance with the final standards no later than [Date 3 years after the date the final rule is published in the **Federal Register**]. New and reconstructed sources would have to be in compliance upon startup of the affected source or no later than [Date the final rule is published in the **Federal Register**], whichever is later.

The proposed initial compliance period begins on the compliance date and ends on the last day of the first full calendar month following the compliance date; except that for new and reconstructed sources required to conduct performance tests, the initial compliance period ends on the last day of the first full calendar month following the performance test if the performance test is conducted later than the compliance date (the proposed rule allows the test to be conducted up to 180 days later). Being "in compliance" means that the owner or operator of the affected source meets the requirements to achieve the proposed emission limitations by the end of the initial compliance period. At the end of the initial compliance period, the owner or operator would use the data and records generated to determine whether or not the affected source is in compliance for that period. If the affected source does not meet the applicable limits and other

requirements, it is out of compliance for the entire initial compliance period.

*Emission Limits.* There are several proposed options for complying with the proposed emission limits, and the testing and initial compliance requirements vary accordingly.

*Option 1: Compliance based on materials used in the affected source*

If you demonstrate compliance based on the materials used, you would determine the mass of organic HAP and the volume fraction of coating solids in all materials used during the compliance period.

To determine the mass of organic HAP in coatings, thinners, and cleaning materials and the volume fraction of coating solids, you could either rely on manufacturer's data or on results from the test methods listed below. You may use alternative test methods provided you get EPA approval in accordance with the NESHAP General Provisions, 40 CFR 63.7(f). However, if there is any inconsistency between the test method results (either EPA's or an approved alternative) and manufacturer's data, the test method results would prevail for compliance and enforcement purposes.

- For organic HAP content, use Method 311 of 40 CFR part 63, appendix A;

- The proposed rule allows you to use non-aqueous volatile matter as a surrogate for organic HAP, which would include all organic HAP plus all other organic compounds, and excluding water. If you choose this option, use Method 24 of 40 CFR part 60, appendix A; and

- For volume fraction of coating solids, use either Equation 1 in § 63.4141 of the proposed rule, ASTM Method D2697-86 (1998), or ASTM Method D6093-97.

To demonstrate initial compliance based on the materials used, you would be required to demonstrate that either the organic HAP content of each coating meets the emission limits and that you use no organic HAP-containing thinners or cleaning materials, or that the total mass of organic HAP in all coatings, thinners, and cleaning materials divided by the total volume of coating solids meets the emission limits. For the latter option, you would be required to:

- Determine the quantity of each coating, thinner, and cleaning material used.

- Determine the mass of organic HAP in each coating, thinner, and cleaning material.

- Determine the volume fraction of coating solids for each coating.

- Calculate the total mass of organic HAP in all materials and total volume of coating solids for the compliance

period. You may subtract from the total mass of organic HAP the amount contained in waste materials you send to a hazardous waste treatment, storage, and disposal facility regulated under 40 CFR part 262, 264, 265, or 266.

- Calculate the ratio of the total mass of organic HAP for the materials used to the total volume of coating solids used.

- Record the calculations and results and include them in your Notification of Compliance Status.

*Option 2: Compliance based on using a capture system and add-on control device*

If you use a capture system and add-on control device, other than a solvent recovery system for which you conduct a liquid-liquid material balance, your testing and initial compliance requirements are as follows:

- Conduct an initial performance test to determine the capture and control efficiencies of the equipment and to establish operating limits to be achieved on a continuous basis. The performance test would have to be completed no later than the compliance date for existing sources and 180 days after the compliance date for new and reconstructed sources. You would also need to schedule it in time to obtain the results for use in completing your compliance determination for the initial compliance period.

- Determine the mass of organic HAP in each material and the volume fraction of coating solids for each coating used during the initial compliance period.

- Calculate the organic HAP emissions from the controlled coating operations using the capture and control efficiencies determined during the performance test and the total mass of organic HAP in materials used in controlled coating operations.

- Calculate the ratio of the total mass of HAP emissions to the total volume of coating solids used during the initial compliance period.

- Record the calculations and results and include them in your Notification of Compliance Status.

If you use a capture system and add-on control device, other than a solvent recovery system for which you conduct liquid-liquid material balances, you would determine both the efficiency of the capture system and the emission reduction efficiency of the control device. To determine the capture efficiency, you would either verify the presence of a permanent total enclosure using EPA Method 204 of 40 CFR part 51, appendix M (and all materials must be applied and dried within the enclosure); or use one of three protocols in § 63.4165 to measure capture efficiency. If you have a permanent total

enclosure and all materials are applied and dried within the enclosure and you route all exhaust gases from the enclosure to a control device, you would assume 100 percent capture.

To determine the emission reduction efficiency of the control device, you would conduct measurements of the inlet and outlet gas streams. The test would consist of three runs, each run lasting 1 hour, using the following EPA Methods in 40 CFR part 60, appendix A:

- Method 1 or 1A for selection of the sampling sites.

- Method 2, 2A, 2C, 2D, 2F, or 2G to determine the gas volumetric flow rate.

- Method 3, 3A, or 3B for gas analysis to determine dry molecular weight.

- Method 4 to determine stack moisture.

- Method 25 or 25A to determine organic volatile matter concentration.

Alternatively, any other test method or data that have been validated according to the applicable procedures in Method 301 of 40 CFR part 63, appendix A, and approved by the Administrator, could be used.

If you use a solvent recovery system, you could determine the overall control efficiency using a liquid-liquid material balance instead of conducting an initial performance test. If you use the material balance alternative, you would be required to measure the amount of all materials used in the affected source during the compliance period and determine the total volatile matter contained in these materials. You would also measure the amount of volatile matter recovered by the solvent recovery system during the compliance period. Then you would compare the amount recovered to the amount used to determine the overall control efficiency, and apply this efficiency to the organic HAP-to-coating solids ratio for the materials used. You would record the calculations and results and include them in your Notification of Compliance Status.

*Operating Limits.* As mentioned above, you would establish operating limits as part of the initial performance test of a capture system and control device, other than a solvent recovery system for which you conduct liquid-liquid material balances. The operating limits are the minimum or maximum (as applicable) values achieved for capture systems and control devices during the most recent performance test that demonstrated compliance with the emission limits. If you operate your capture system and control device at different sets of representative operating conditions, you must establish operating limits for the parameters for each different operating condition.

The proposed rule specifies the parameters to monitor for the types of emission control systems commonly used in the industry. You would be required to install, calibrate, maintain, and continuously operate all monitoring equipment according to manufacturer's specifications and ensure that the continuous parameter monitoring systems (CPMS) meet the requirements in § 63.4168 of the proposed rule. If you use control devices other than those identified in the proposed rule, you would submit the operating parameters to be monitored to the Administrator for approval. The authority to approve the parameters to be monitored is retained by EPA and is not delegated to States.

If you use a thermal or catalytic oxidizer, you would continuously monitor the appropriate temperature and record it at least every 15 minutes. For thermal oxidizers, the temperature monitor is placed in the firebox or in the duct immediately downstream of the firebox before any substantial heat exchange occurs. The operating limit would be the average temperature measured during the performance test, and for each consecutive 3-hour period the average temperature would have to be at or above this limit. For catalytic oxidizers, temperature monitors are placed immediately before and after the catalyst bed. The operating limits would be the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed during the performance test, and for each 3-hour period the average temperature and the average temperature difference would have to be at or above these limits.

If you use a carbon adsorber and do not conduct liquid-liquid material balances to demonstrate compliance, you would monitor the carbon bed temperature after each regeneration and the total amount of steam or nitrogen used to desorb the bed for each regeneration. The operating limits would be the carbon bed temperature (not to be exceeded) and the amount of steam or nitrogen used for desorption (to be met as a minimum).

If you use a condenser, you would monitor the outlet gas temperature to ensure that the air stream is being cooled to a low enough temperature. The operating limit would be the average condenser outlet gas temperature measured during the performance test, and for each consecutive 3-hour period the average temperature would have to be at or below this limit.

For each capture system that is not a permanent total enclosure, you would establish operating limits for gas

volumetric flow rate or duct static pressure for each enclosure or capture device. The operating limit would be the average volumetric flow rate or duct static pressure during the performance test, to be met as a minimum. For each capture system that is a permanent total enclosure, the operating limit would require the average facial velocity of air through all natural draft openings to be at least 200 feet per minute or the pressure drop across the enclosure to be at least 0.007 inches water.

#### *G. What Are the Continuous Compliance Provisions?*

*Emission Limits.* If you demonstrate compliance with the proposed emission limits based on the materials used, you would demonstrate continuous compliance if, for each monthly compliance period, the ratio of organic HAP to coating solids is less than or equal to the emission limits. You would follow the same procedures for calculating the organic HAP to coating solids ratio that you used for the initial compliance period.

For each coating operation on which you use a capture system and control device, other than solvent recovery for which you conduct a liquid-liquid material balance, you would use the continuous parameter monitoring results for the month in determining the mass of organic HAP emissions. If the monitoring results indicate no deviations from the operating limits and there were no bypasses of the control device, you would assume the capture system and control device are achieving the same percent emission reduction efficiency as they did during the most recent performance test in which compliance was demonstrated. You would then apply this percent reduction to the total mass of organic HAP in materials used in controlled coating operations to determine the monthly emission rate from those operations. If there were any deviations from the operating limits during the month or any bypasses of the control device, you would account for them in the calculation of the monthly emission rate by assuming the capture system and control device were achieving zero emission reduction during the periods of deviation.

For each coating operation on which you use a solvent recovery system and conduct a liquid-liquid material balance each month, you would use the liquid-liquid material balance to determine control efficiency. To determine the overall control efficiency, you must measure the amount of all materials used during each month and determine the volatile matter content of these

materials. You must also measure the amount of volatile matter recovered by the solvent recovery system during the month, calculate the overall control efficiency, and apply it to the total mass of organic HAP in the materials used to determine total organic HAP emissions.

*Operating Limits.* If you use a capture system and control device, the proposed rule would require you to achieve on a continuous basis the operating limits you establish during the performance test. If the continuous monitoring shows that the capture system and control device are operating outside the range of values established during the performance test, you have deviated from the established operating limits.

If you operate a capture system and control device that allow emissions to bypass the control device, you would have to demonstrate that HAP emissions from each emission point within the affected source are being routed to the control device by monitoring for potential bypass of the control device. You may choose from the following four monitoring procedures:

- Flow control position indicator to provide a record of whether the exhaust stream is directed to the control device;
- Car-seal or lock-and-key valve closures to secure the bypass line valve in the closed position when the control device is operating;
- Valve closure continuous monitoring to ensure any bypass line valve or damper is closed when the control device is operating; or
- Automatic shutdown system to stop the coating operation when flow is diverted from the control device.

If the bypass monitoring procedures indicate that emissions are not routed to the control device, you have deviated from the emission limits.

*Operations During Startup, Shutdown, and Malfunction.* If you use a capture system and control device for compliance, you would be required to develop and operate according to a startup, shutdown, and malfunction plan during periods of startup, shutdown, and malfunction of the capture system and control device.

*Emissions Reductions Plan for Mixing, Storage, and Waste Handling.* If you use a capture system and add-on control device for compliance, you would be required to develop and operate according to a plan for reducing emissions from mixing operations, storage tanks or other containers, and waste handling operations. This plan would include a description of all steps taken to minimize emissions from these sources (e.g., using closed storage containers practices to minimize emissions during filling and transfer of

contents from containers, using spill minimization techniques, placing solvent-laden cloth in closed containers immediately after use, *etc.*). If you do not develop a plan for reducing HAP emissions or you do not implement the plan, this would be a deviation from the work practice standard. You would have to make the emissions reductions plan available for inspection if the Administrator requests to see it. Under the option where emissions are reduced by using lower-HAP or no-HAP materials, we are assuming that all the HAP in the materials entering the affected source are volatilized (emitted), unless the facility can show that a portion of the HAP released is recovered. Therefore, emissions from operations occurring within the affected source (*e.g.*, mixing operations) are accounted for in the estimate of total materials usage at the affected source. However, when you comply by using capture systems and add-on control devices, these systems and control devices may not be associated with some operations within the affected source, such as the mixing, storage, and waste handling operations. An emissions reductions plan is needed to assure that emissions are reduced from those uncontrolled operations using best available practices. When the plan is instituted as a work practice, it should provide a level of quality control and assurance.

#### *H. What Are the Notification, Recordkeeping, and Reporting Requirements?*

You are required to comply with the applicable requirements in the NESHAP General Provisions, subpart A of 40 CFR part 63, as described in the proposed rule. The General Provisions notification requirements include: initial notifications, notification of performance test if you are complying using a capture system and control device, notification of compliance status, and additional notifications required for affected sources with continuous monitoring systems. The General Provisions also require certain records and periodic reports.

**Initial Notifications.** If the proposed standards apply to you, you must send a notification to the EPA Regional Office in the region where your facility is located, and to your State agency, at least 1 year before the compliance date for existing sources and within 120 days after the date of initial startup for new and reconstructed sources, or 120 days after publication of the final rule, whichever is later. That report notifies us and your State agency that you have an existing facility that is subject to the

proposed standards or that you have constructed a new facility. Thus, it allows you and the permitting authority to plan for compliance activities. You would also need to send a notification of planned construction or reconstruction of a source that would be subject to the proposed rule and apply for approval to construct or reconstruct.

**Notification of Performance Test.** If you demonstrate compliance by using a capture system and control device for which you do not conduct a liquid-liquid material balance, you would conduct a performance test. The performance test would be required no later than the compliance date for an existing affected source, and no later than 180 days after startup or 180 days after publication of the final rule, whichever is later, for a new or reconstructed source. You must notify us (or the delegated State or local agency) at least 60 calendar days before the performance test is scheduled to begin, as indicated in the General Provisions for the NESHAP.

**Notification of Compliance Status.** Your compliance procedures would depend on which compliance option you choose. For each compliance option, you would send us a Notification of Compliance Status within 30 days after the end of the initial compliance period. In the notification, you would certify whether the affected source has complied with the proposed standards, identify the option(s) you used to demonstrate initial compliance, summarize the data and calculations supporting the compliance demonstration, and describe how you will determine continuous compliance.

If you elect to comply by using a capture system and control device for which you conduct performance tests, you must provide the results of the tests. Your notification would also include the measured range of each monitored parameter and the operating limits established during the performance test, and information showing whether the source has complied with its operating limits during the initial compliance period.

**Recordkeeping Requirements.** You would be required to keep records of reported information and all other information necessary to document compliance with the proposed rule for 5 years. As required under the General Provisions, records for the 2 most recent years must be kept on-site; the other 3 years' records may be kept off-site. Records pertaining to the design and operation of the control and monitoring equipment must be kept for the life of the equipment.

Depending on the compliance option that you choose, you may need to keep records of the following:

- Organic HAP content, volatile matter content, coating solids content, and quantity of the coatings, thinners, and cleaning materials used during each compliance period; and
- All documentation supporting initial notifications and notifications of compliance status.

If you demonstrate compliance by using a capture system and control device, you would also need to keep records of the following:

- The occurrence and duration of each startup, shutdown, or malfunction of the emission capture system and control device;
- All maintenance performed on the capture system and control device;
- Actions taken during startup, shutdown, and malfunction that are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan;
- All information necessary to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan when the plan procedures are followed;
- All information necessary to demonstrate conformance with the affected source's plan for minimizing emissions from mixing, storage, and waste handling operations;
- Each period during which a CPMS is malfunctioning or inoperative (including out-of-control periods);
- All required measurements needed to demonstrate compliance with the standards; and
- All results of performance tests.

The proposed rule would require you to collect and keep records according to certain minimum data requirements for the CPMS. Failure to collect and keep the specified minimum data would be a deviation that is separate from any emission limits, operating limits, or work practice standards.

Deviations, as determined from these records, would need to be recorded and also reported. A deviation is any instance when any requirement or obligation established by the proposed rule including, but not limited to, the emission limits, operating limits, and work practice standards, is not met.

If you use a capture system and control device to reduce HAP emissions, you would have to make your startup, shutdown, and malfunction plan available for inspection if the Administrator requests to see it. It would stay in your records for the life of the affected source or until the source is no longer subject to the proposed standards. If you revise the plan, you

would need to keep the previous superseded versions on record for 5 years following the revision.

**Periodic Reports.** Each reporting year is divided into two semiannual reporting periods. If no deviations occur during a semiannual reporting period, you would submit a semiannual report stating that the affected source has been in continuous compliance. If deviations occur, you would include them in the report as follows:

- Report each deviation from the monthly emission limit.
- If you are complying by using a thermal oxidizer, report all times when a consecutive 3-hour average temperature is below the operating limit.
- If you are complying by using a catalytic oxidizer, report all times when a consecutive 3-hour average temperature difference across the catalyst bed is below the operating limit, and also report all times when a 3-hour average temperature before the catalyst bed is below the operating limit.
- If you are complying by using oxidizers, or solvent recovery systems where liquid-liquid material balances are not conducted, report all times when the value of the site-specific operating parameter used to monitor the capture system performance was less than the operating limit established for the capture system.
- If you are complying by using a carbon adsorber for which you do not conduct liquid-liquid material balances, report all times when the steam or nitrogen flow is less than the operating limit and also report all times when the carbon bed temperature is more than the operating limit.
- If you are complying by using a condenser, report all times when a 3-hour average outlet temperature is higher than the operating limit.
- If your capture system contains bypass lines that could divert emissions from the control device to the atmosphere, report all times when emissions were not routed to the control device.
- Report other specific information on the periods of time the deviations occurred.

You would also have to include an explanation in each semiannual report if a change occurs that might affect the compliance status of the affected source, or you change to another option for meeting the emission limit.

**Other Reports.** You would be required to submit reports for periods of startup, shutdown, and malfunction of the capture system and control device. If the procedures you follow during any startup, shutdown, or malfunction are

inconsistent with your plan, you would report those procedures with your semiannual reports in addition to immediate reports required by § 63.10(d)(5)(ii).

### III. Rationale for Selecting the Proposed Standards

#### A. How Did We Select the Source Category?

The surface coating of large appliances is a source category that is on the list of source categories to be regulated because it contains major sources which emit or have the potential to emit at least 10 tons of any one HAP or at least 25 tons of any combination of HAP annually. The proposed rule would control HAP emissions from both new and existing major sources. Area sources are not being regulated under this proposed rule.

The surface coating of large appliances as described in the listing includes any facility engaged in the surface coating of large appliance parts or products. We use the large appliance product lists contained in the SIC and NAICS code descriptions to describe the vast array of large appliance parts and products.

We intend the source category to include facilities for which the surface coating of large appliances is either their principal activity or an integral part of a production process that is the principal activity. Most coating operations are located at plant sites that are dedicated to these activities. However, some may be located at sites for which some other activity is principal. Collocated surface coating operations comparable to the types and sizes of the dedicated facilities, in terms of the coating operation and applicable emission control techniques, are included in the source category.

The source category does not include research or laboratory facilities or janitorial, building, and facility maintenance operations.

#### B. How did we select the regulated pollutants?

**Organic HAP.** Available emission data collected during the development of the proposed NESHAP show that the primary organic HAP emitted from the surface coating of large appliances include xylene, glycol ethers, toluene, methylene diphenyl diisocyanate, and methyl ethyl ketone. These compounds account for approximately 82 percent of this category's nationwide organic HAP emissions. However, many other organic HAP are used, or can be used, in large appliance coatings, thinners, and

cleaning materials. Therefore, the proposed rule would regulate emissions of all organic HAP.

**Inorganic HAP.** Although most of the coatings used in this source category do not contain inorganic HAP, some special purpose coatings used by this source category do contain inorganic HAP such as chromium, cobalt, lead, and manganese. Emissions of these materials to the atmosphere are minimal because the facilities in this source category employ either water curtains or dry filters that remove overspray particles from the spray booth exhaust. At this time, it does not appear that emissions of inorganic HAP from this source category warrant Federal regulation.

#### C. How Did We Select the Affected Source?

In selecting the affected source(s) for emission standards, our primary goal is to ensure that MACT is applied to HAP-emitting operations or activities within the source category being regulated. The affected source also serves to establish where new source MACT applies under a particular standard. Specifically, the General Provisions in subpart A of 40 CFR part 63 define the terms "construction" and "reconstruction" with reference to the term "affected source" and provide that new source MACT applies when construction or reconstruction of an affected source occurs. The collection of equipment and activities evaluated in determining MACT (including the MACT floor) is used in defining the affected source.

When an emission standard is based on a collection of emissions sources, or total facility emissions, we select an affected source based on that same collection of emission sources, or the total facility, as well. This approach for defining the affected source broadly is particularly appropriate for industries where a plantwide emission standard provides the opportunity and incentive for owners and operators to utilize control strategies that are more cost effective than if separate standards were established for each emission point within a facility.

**Selection of Affected Source.** The affected source for these proposed standards is broadly defined to include all operations associated with the coating of large appliances and the cleaning of product substrates or coating operation equipment. These operations include storage and mixing of coatings and other materials; surface preparation of the large appliances prior to coating application; coating application and flash-off, drying and curing of applied



coatings; cleaning operations; and waste handling operations.

In selecting the affected source, we considered, for each operation, the extent to which HAP-containing materials are used and the amount of HAP that are emitted. Cleaning and coating application, flash-off, and curing/drying operations account for the majority of HAP emissions at large appliance surface coating operations. These operations are included in the affected source.

We were not able to obtain data to adequately quantify HAP emissions from storage, mixing, and waste handling. However, solvents that are added to coatings as thinners, and other HAP-containing additives to coatings, may be emitted during mixing and storage. The level of emissions depends on the type of mixing and the type of storage container and the work practices used at the facility. Emissions from waste handling operations depend on the type of system used to collect and transport organic HAP-containing waste coatings, thinners, and cleaning materials in the facility. For example, solvent-laden rags that are used to clean spray booths or tanks could be a source of HAP emissions. The method used to isolate and store such rags affects the level of emissions to ambient air. Mixing, storage, and waste handling operations are included in the affected source.

A broad definition of the affected source was selected to provide maximum flexibility in complying with the proposed emission limits for organic HAP. In planning its total usage of HAP-containing materials, each facility can select among available coatings, thinners, and cleaning materials to comply with the proposed limits.

Additional information on the large appliance surface coating operations selected for regulation, and other operations, are included in the docket for the proposed standards.

*D. How did we determine the basis and level of the proposed standards for existing and new sources?*

The sections below present the rationale for determining the MACT floor, regulatory alternatives beyond the floor, and selection of the proposed standards for existing and new affected sources.

*How did we determine the MACT floor technology?* After we identify the specific source categories or subcategories of sources to regulate under section 112 of the CAA, we must develop emission standards for each category and subcategory. Section 112(d)(3) establishes a minimum

baseline or "floor" for standards. For new sources in a category or subcategory, the standards cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The standards for existing sources can be less stringent than standards for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources (or the best-performing five sources for categories or subcategories with fewer than 30 sources).

Within the large appliance industry, organic HAP emission control for cleaning and surface coating operations is accomplished primarily through the use of lower-HAP coatings, thinners, and cleaning materials. Add-on capture and control systems for organic HAP are rarely used by the industry. While lower organic HAP materials have achieved broad use throughout the industry, each particular coating technology is not used at every facility. Rather, facilities use various combinations of low-HAP coatings, thinners, and cleaning materials. Thus, we judged the most reasonable approach to establishing a MACT floor to be the evaluation of a facility's organic HAP emissions from all coating-related operations. To account for differences in production levels from one facility to another, we normalized the organic HAP emission rate by the volume of coating solids used. We believe coating solids usage is an appropriate indicator of overall production levels.

We used information obtained from industry survey responses to estimate the sourcewide organic HAP emission rate from each survey respondent. We calculated total organic HAP emissions by assuming that 100 percent of the volatile components in all coatings (including adhesives), thinners, and cleaning materials (including surface preparation materials) are emitted. Major sources were identified as: those facilities that listed "major source" or "synthetic minor source" as their title V status on their questionnaire response; those facilities that reported their HAP emissions under "maximum design capacity" as greater than 9.1 megagrams per year (Mg/yr) (10 tpy); and other facilities that we judged to have the capacity to increase their HAP emissions to at least 9.1 Mg/yr, even though they did not identify themselves as major or synthetic minor sources. The final group of facilities were included because they reported actual HAP emissions of greater than 3 Mg (3.3 tons) during the reporting year and did not report a "maximum design capacity." If these facilities operate at full capacity

over multiple shifts each day, their annual emission rate may equal or exceed 9.1 Mg/yr.

The survey response information was used to determine the total volume of coating solids used by each source from all types of coatings. We included decorative, protective, and functional coatings in this total.

Using the sourcewide organic HAP emissions and the total volume of coating solids used for each survey respondent, we calculated the normalized organic HAP emissions (emission rate) in units of kilograms organic HAP per liter of coating solids used. The facilities were then ranked from the lowest emission rate to the highest, with the following exceptions. Facilities that reported the predominant use of powder coatings (greater than 90 percent of all coating solids usage) were excluded from the MACT floor calculations. While powder coating technology is a proven low-HAP coating technology, its applicability is not considered to be universal for all products manufactured within the source category. For those facilities whose products can be coated with this technology, the use of powder coatings is a very effective and efficient means of reducing HAP emissions. The degree of HAP reductions that can be achieved with the powder coating technology is close to 100 percent. However, because many large appliance parts and products cannot be satisfactorily coated with powder coating technology, we concluded that it would not be appropriate to define the MACT floors based primarily on their use. Facilities that used lesser amounts of powder coatings in combination with other low-HAP coating technologies were included in the MACT floor determination.

For some facilities, the organic HAP to coating solids ratio was very low due to the facilities' usage of unusually large quantities of low-HAP and non-HAP adhesives. The low- and non-HAP adhesives usage for these facilities ranged from 40 to 84 percent of all coating solids. While many facilities in the source category use adhesives (a functional coating), their use is not as widespread compared to the decorative and protective coatings usually associated with the appearance of large appliance products. On the average, adhesive usage among all facilities in the source category database is about 4 percent of the total solids used. We concluded that because of the specific function served by adhesives, the low-HAP adhesive technology employed in the facilities described above may not be transferable to the decorative and

protective coatings which account for the remaining 96 percent of coating solids usage in the industry. Thus, we concluded that the facilities using atypically large quantities of these adhesives relative to decorative and protective coatings should not be included in the floor determination of existing sources or new sources.

For the existing source MACT floor, the top 12 percent of the facilities were determined based on the number of facilities in the MACT floor database (95 database facilities  $\times$  12 percent = 11.4). Because the calculated value was greater than 11, we used data from 12 facilities to determine the MACT floor. The floor was calculated as the arithmetic average of the emission rates of the top 12 best-performing representative facilities.

This process resulted in a MACT floor equal to 0.13 kg HAP/liter of coating solids (1.1 lb/gal). The survey data showed no appreciable differences between the floor facilities and the remaining facilities in the database in terms of the substrates coated, the coating technologies used, or the applicability of control measures across the various operations. Therefore, we believe the floor level of control is achievable by all existing sources.

The best performing facility in our database has an emission rate of 0.022 kg HAP/liter of coating solids (0.18 lb/gal). This facility operates under SIC 3585 and manufactures supermarket display cases and equipment. This facility uses both solvent-based coatings and powder coatings and is considered similar to the other sources in the category in terms of the substrate coated and the coating technologies used. Therefore, the new source MACT floor was based on the data from this facility and was determined to be 0.022 kg HAP/liter (0.18 lb/gal) of coating solids.

*How did we consider beyond-the-floor technology?* After the floors have been determined for new and existing sources in a source category or subcategory, we must set emission standards that are technically achievable and no less stringent than the floors. Such standards must then be met by all sources within the category or subcategory. We identify and consider any reasonable regulatory alternatives that are "beyond-the-floor," taking into account emissions reductions, cost, non-air quality health and environmental impacts, and energy requirements. These alternatives may be different for new and existing sources because of different MACT floors, and separate standards may be established for new and existing sources.

We identified three regulatory alternatives more stringent than the MACT floor level of control for organic

HAP. These alternatives were conversion to powder coatings; conversion to liquid coatings that have a very low, or no, organic HAP content; and use of add-on capture systems and control devices.

Information indicates that several large appliance surface coating facilities have converted to using only powder coatings. Such facilities typically produce a single type of product (such as laundry equipment), do not require unusual finishes, and use a small number of colors. Many large appliance surface coating facilities, however, manufacture more than one product and often use a wide array of colors. Although powder coatings may be somewhat more durable than conventional liquid coatings, specialty finishes such as antique and crackle, as well as the palette of designer colors offered by some manufacturers, may not be adequately duplicated by powder coatings. Consequently, while powder coating is a proven technology that can be used in many situations, it is not universally applicable in the large appliance industry and was, therefore, rejected as a beyond-the-floor option.

Lower organic HAP liquid coatings fall into two primary categories. The most common category is coatings formulated with solvents that are not organic HAP (but may be VOC). The second category is those coatings that result from alternate technologies such as ultraviolet (UV)—curable coatings and electron beam (EB)—curable coatings. These coatings do not employ organic HAP or VOC to keep the pigment and other components of the coating in solution until curing. Therefore, organic HAP emissions are very small.

These lower organic HAP coatings are currently in production use in some industries, but their applicability in the large appliance industry is limited. Given the limited applicability of UV—curable and EB—curable coatings, we do not believe it is feasible to require the use of these coatings and rejected them as a beyond-the-floor option for organic HAP.

It is technically feasible to reduce emissions from affected sources by at least 95 percent through the use of capture systems and add-on control devices. Based on the model plants analysis used to estimate the impacts of the proposed rule, over half of the existing facilities will be required to achieve HAP emissions reductions of greater than 80 percent to meet the existing source MACT floor level of control. For these facilities, the incremental HAP reductions that could be achieved by using capture systems

and control devices to comply with a "beyond-the-floor" alternative of 95 percent reduction would range from about 0.30 Mg (0.33 tons) to about 1.7 Mg (1.9 tons). The estimated cost of a permanent total enclosure and a control device, such as an oxidizer, for these facilities could be as much as \$1 million. We believe the incremental emissions reductions that would be achieved at this time do not warrant the additional cost that each existing source would incur by using add-on control systems. Therefore, we rejected requiring capture systems and add-on control devices as a beyond-the-floor option for organic HAP.

*How did we select the proposed standards?* For existing sources, we based the proposed standards on the existing source MACT floor. As described earlier, we determined that beyond-the-floor options were not technically or economically feasible for all existing sources. For the same reasons, we based the proposed standards for new sources on the new source MACT floor.

The MACT levels of control for new and existing sources can be achieved in several different ways. Many sources would be able to use lower-HAP coatings, although they may not be available to meet the needs of every source. If a source is also using cleaning materials that contain organic HAP, then it may be able to switch to lower-HAP or non-HAP cleaning materials, which are widely available, to reduce the sourcewide organic HAP emissions rate to the MACT level. Other available options are the use of powder coatings or capture systems and add-on control devices to reduce emissions.

We note here that our assumption, used in the development of the MACT floors, that 100 percent of the organic HAP in the materials used are emitted by the affected source would not apply when the source sends waste organic HAP-containing materials to a facility for treatment or disposal. We made that assumption because the industry survey responses provided little information as to the amount of organic HAP recovered and recycled or treated and disposed. We, therefore, concluded that that practice may not be common within the large appliance industry. We recognize, however, that some large appliance facilities may conduct such activities and should be allowed to account for such activities in determining their emissions. Thus, the proposed rule allows you to reduce the organic HAP emissions by the amount of any organic HAP contained in waste treated or disposed at a hazardous waste treatment, storage, and disposal facility

that is regulated under 40 CFR part 262, 264, 265, or 266.

*E. How did we select the format of the standards?*

Numerical emission standards are required by section 112(h) of the CAA unless we can justify that it is not feasible to prescribe or enforce an emission standard, in which case a design, equipment, work practice, or operational standard can be set.

We selected the format of the standards to be mass of organic HAP per volume of coating solids. The performance-based nature of this proposed format would allow large appliance coating operation owners and operators flexibility in choosing any combination of means (including coating reformulation, use of lower-HAP or non-HAP materials, solvent elimination, work practices, and add-on control devices) to comply with the emission limits that is workable for their particular situations.

We selected volume of coating solids as a component of the proposed standards to normalize the rate of organic HAP emissions across all sizes and types of facilities. We selected the volume of coating solids used because it is directly related to the surface area coated (*i.e.*, the average dry film thickness of coatings on most large appliance parts or products is generally consistent) and, therefore, provides an equitable basis for all coatings, regardless of differences in coating densities. A format based on the mass or weight of coating solids (instead of volume) could result in inequitable standards for higher-density pigmented coatings, such as basecoats or enamels, compared to coatings with lower densities per unit volume.

Other choices for the format of the standards that we considered, but rejected, included a usage limit (mass per unit time) and a never-to-be-exceeded limit on the organic HAP content of coatings, solvents, or cleaning materials. As it is not our intent to limit a facility's production under these proposed standards, we rejected a usage limit. We also rejected a never-to-be-exceeded limit, as the proposed standards allow averaging of HAP emissions from the materials used during the compliance period.

*F. How did we select the testing and initial compliance requirements?*

The proposed standards would allow you to choose among several methods to demonstrate compliance with the proposed standards for organic HAP: coatings with low or no organic HAP; an overall organic HAP emission rate from

all coatings, thinners, and cleaning materials that is less than the applicable emission limit; or capture systems and control devices.

*Coatings with Low or No Organic HAP.* You would be required to document the organic HAP content of all coatings and show that each is less than the applicable emission limit. You would also have to show that each thinner and each cleaning material used contains no organic HAP. Method 311 is the method developed by EPA for determining the mass fraction of organic HAP in coatings and has been used in previous surface coating NESHAP. We have not identified any other methods that provide advantages over Method 311 for use in the proposed standards.

Method 24 is the method developed by EPA for determining the mass fraction of volatile matter for coatings and can be used if you choose to determine the non-aqueous volatile matter content as a surrogate for organic HAP. In past standards, VOC emission control measures have been implemented in coating industries, with Method 24 as the compliance method. We have not identified any other methods that provide advantages over Method 24 for use in the proposed standards.

The proposed requirements for determining volume fraction of coating solids would allow you to choose between calculating the value using Equation 1 in § 63.4141 of the proposed standards or measuring the volume with either ASTM Method D2697-86 (1998) or ASTM Method D6093-97.

*Overall Organic HAP Emission Rate.* To demonstrate initial compliance using this option, you would calculate the organic HAP emission rate for one or more coating operations in the affected source, based on the mass of organic HAP in all coatings, thinners, and cleaners and the volume of coating solids used during the compliance period, and demonstrate that it does not exceed the applicable emission limit. You would determine these values using the methods discussed previously.

*Capture Systems and Control Devices.* If you use a capture system and control device, other than a solvent recovery device for which you conduct a liquid-liquid material balance, you would be required to conduct an initial performance test of the system to determine its overall control efficiency. For a solvent recovery system for which you conduct a liquid-liquid material balance, you would determine the quantity of volatile matter applied and the quantity recovered during the initial compliance period to determine its overall control efficiency. For both

cases, the overall control efficiency would be combined with the monthly mass of organic HAP in the coatings and other materials used to calculate the monthly HAP emission rate in kg HAP/liter of coating solids. If you conduct a performance test, you would also determine parameter operating limits during the test. The test methods that the proposed standards would require for the performance test have been required under many standards of performance for industrial surface coating sources under 40 CFR part 60 and NESHAP under 40 CFR part 63. We have not identified any other methods that provide advantages over these methods.

*G. How Did We Select the Continuous Compliance Requirements?*

To ensure continuous compliance with the proposed organic HAP emission limits and/or operating limits, the proposed standards would require continuous parameter monitoring of capture systems and control devices and recordkeeping. We selected the following requirements based on reasonable cost, ease of execution, and usefulness of the resulting data to both the owners or operators and EPA for ensuring continuous compliance with the emission limits and/or operating limits.

We are proposing that certain parameters be continuously monitored for the types of capture systems and control devices commonly used in the industry. These monitoring parameters have been used in other standards for similar industries. The values of these parameters that correspond to compliance with the proposed emission limits are established during the initial or most recent performance test that demonstrates compliance. These values are your operating limits for the capture system and control device.

You would be required to determine 3-hour average values for most monitored parameters for the affected source. We selected this averaging period to reflect operating conditions during the performance test to ensure the control system is continuously operating at the same or better control level as during a performance test demonstrating compliance with the emission limits.

To demonstrate continuous compliance with the monthly emission limits, you would also need records of the quantity of coatings and other materials used and the data and calculations supporting your determination of their organic HAP content. If you conduct liquid-liquid material balances, you would need

records of the quantity of volatile matter used and the quantity recovered by the solvent recovery system each month.

#### *H. How Did We Select the Notification, Recordkeeping, and Reporting Requirements?*

You would be required to comply with the applicable requirements in the NESHAP General Provisions, subpart A of 40 CFR part 63, as described in Table 2 of the proposed subpart NNNN. We evaluated the General Provisions requirements and included those we determined to be the minimum notification, recordkeeping, and reporting necessary to ensure compliance with, and effective enforcement of, the proposed standards.

#### *I. How Did We Select the Compliance Date?*

You would be allowed 3 years to comply with the final standards for existing affected sources. This is the maximum period allowed by the CAA. We believe that 3 years for compliance is necessary to allow adequate time to accommodate the variety of compliance methods that existing sources may use. Most sources in this category would need this 3-year maximum amount of time to develop and test reformulated coatings, particularly those that may opt to comply using a different lower-emitting coating technology. We want to encourage the use of these pollution prevention technologies. In addition, time would be needed to establish records management systems required for enforcement purposes. Some sources may need the time to purchase and install emission capture and control systems. In such cases, you would need to obtain a permit for the use of add-on controls, which will require time for approval from the permitting authority.

The CAA requires that new or reconstructed affected sources comply with standards immediately upon startup or the effective date of the final rule, whichever is later.

#### **IV. Summary of Environmental, Energy, and Economic Impacts**

Model plants were developed to aid in the estimation of the impacts the proposed standards would have on the large appliance industry. Four model plants distinguished by size, as measured by the total volume of coating solids used, were developed. Impacts were then developed for each model plant, and these individual impacts were scaled to nationwide levels based on the number of facilities corresponding to each model plant size. We used the model plant approach because we did not have adequate data

to estimate impacts for each actual facility.

A variety of compliance methods are available to the industry to meet the proposed emission limits. We analyzed the information obtained from the industry survey responses, industry site visits, trade groups, and industry representatives to determine which compliance methods would most likely be used by existing and new sources. We expect that the most widely-used method for existing sources would be low-HAP content liquid coatings (coatings with HAP contents at or below the emission limits). Powder coatings, no-HAP cleaning materials, and add-on capture and control systems would likely be used by existing sources, but to a lesser extent. Various combinations of these methods may be used. New sources are largely expected to use powder coating technologies or a combination of low-HAP coatings and no-HAP cleaning materials.

For the purpose of assessing impacts, we assumed that all existing sources would convert to liquid coatings and thinners with lower-HAP content than presently used and no-HAP cleaning materials. We assumed that new sources would use either powder coatings or lower-HAP coatings and no-HAP cleaning materials.

We first estimated the impacts of the proposed emission limits on the four model plants. To scale up the model plant impacts to nationwide levels, we multiplied the individual model plant impacts by the estimated number of major sources in the United States corresponding to each plant size. We estimated that there are 74 existing major source facilities nationwide. For more information on how impacts were estimated, see Chapters 6 and 7 of the background information document, EPA-453/R-00-006.

#### *A. What Are the Air Impacts?*

For existing major sources, we estimated that compliance with the proposed emission limits would result in reductions of nationwide organic HAP emissions of 1,080 Mg/yr (1,191 tpy). This represents a reduction of 45 percent from the baseline organic HAP emissions of 2,394 Mg/yr (2,639 tpy).

For new sources, we have assumed that most, if not all, will use coating technologies that are considered to be "state-of-the-art" coatings (e.g., powder coatings and low-HAP liquid coatings). Powder coating technology has advanced rapidly in recent years and is gaining widespread acceptance in the large appliance industry. Powder coatings are not only very cost effective, their use eliminates the problems

associated with worker exposure to organic solvents. Many of the facilities in the database indicated that they were in the process of converting part or all of their coating operations to use powder coatings. Also, four of the most recently constructed facilities in the database are using powder coatings extensively and have HAP emission levels below the MACT level for new sources. For these reasons, we project the baseline emission levels for new sources to be at, or below, the requirements in the proposed standards. Therefore, we have assumed no emissions reductions from new sources attributable to the proposed standards.

#### *B. What Are the Cost Impacts?*

We have estimated the costs related to complying with the emission limitations and meeting the monitoring, recordkeeping, and reporting requirements. The costs to comply with the emission limitations include the increased cost of reformulated low-HAP coating materials, as well as any capital expenditures that would be required to facilitate the use of these materials. Alternatively, facilities could choose to purchase, install, and operate capture systems and add-on control devices. We have assumed for this analysis that all affected facilities will comply through the use of reformulated coatings, thinners, and cleaning materials, and that these materials can be utilized without the need for capital expenditures. Annual costs for meeting the monitoring, recordkeeping, and reporting requirements of the proposed rule have also been included.

*Existing sources.* To comply with the proposed standards, existing facilities will likely use reformulated coatings, thinners, and cleaning materials. Compliance costs were estimated to be the incremental cost difference between the materials currently used and the complying materials. Estimates of cost impacts were based on four model plants that were developed to represent the range of sizes and coating materials found throughout the industry. Each model plant was assumed to comply with the proposed standards by switching to non-HAP adhesives, surface preparation materials, and cleaning materials and reducing the HAP content of the coatings and thinners. The annual incremental cost of the reformulated raw materials ranged from approximately \$700 for model plant 1, representing the segment of industry with the lowest coating solids usage, to \$26,000 for model plant 4, representing the segment of industry that uses over 200,000 liters of coating solids. The nationwide cost impact was

estimated for each industry segment by multiplying the annual costs for each model plant by the number of facilities represented by that model plant. A total nationwide cost impact associated with material usage was estimated by summing the nationwide costs for each of the four industry segments. In addition, we included estimates for monitoring, recordkeeping, and reporting costs for all 74 affected sources.

We estimate total nationwide annual costs in the fifth year to comply with the proposed emission limits to be \$1.63 million for existing sources. These costs include approximately \$.48 million for direct costs associated with material usage and \$1.15 million for recordkeeping and reporting.

*New sources.* We estimate the number of new major sources to be four per year, based on an average of the number of new facilities constructed from 1993 to 1997. In the absence of the proposed standards, we anticipate that most, if not all, new sources will primarily use newer coating technologies such as powder coatings, higher solids, and low-HAP liquid coatings. Because these coatings are very cost effective and new facilities would likely choose to use them even in the absence of the proposed standards, no additional costs associated with material usage were assigned for complying with the proposed standards. Therefore, only the costs of monitoring, recordkeeping, and reporting have been assigned to new facilities.

We estimate the annual cost in the fifth year due to monitoring, recordkeeping, and reporting to be \$341,000. We estimated \$91,000 each year for the four new sources (\$23,000 per facility) for their initial year of monitoring, recordkeeping, and reporting. In each subsequent year of operation, the estimated monitoring, recordkeeping, and reporting cost is \$16,000 per facility.

#### C. What Are the Economic Impacts?

We performed an economic impact analysis (EIA) to provide an estimate of the facility and market impacts of the proposed standards as well as the social costs. In general, we expect the economic impacts of the proposed standards to be minimal, with price increases and production decreases of less than 0.01 percent. Based on a model referred to as a "perfectly competitive economic model" of this industry, we estimate social costs of approximately \$1.62 million in the fifth year for existing sources, with the burden being roughly equally shared by consumers and producers.

For affected facilities, the distribution of costs is slanted toward the lower impact levels with many facilities incurring only those related to monitoring, recordkeeping, and reporting. The EIA indicates that these regulatory costs are expected to represent only 0.01 percent of the value of product shipments, which should not cause producers to cease or alter their current operations. Hence, no firms or facilities are expected to become at risk of closure because of the proposed standards. International trade impacts are expected to be negligible because of the very small price increase (*i.e.*, 0.01 percent). Based on the projected characteristics and costs for new sources, we do not expect any differential impact on these sources. For more information, refer to the "Economic Impact Analysis of the Proposed NESHAP: Surface Coating of Large Appliances" (Docket No. A-97-41).

#### D. What Are the Non-Air Health, Environmental, and Energy Impacts?

Based on information from the industry survey responses, we found no indication that the use of low organic HAP content coatings, thinners, and cleaning materials at existing sources would result in any increase or decrease in non-air health, environmental, and energy impacts. There would be no change in the utility requirements associated with the use of these materials, so there would be no change in the amount of energy consumed as a result of the material conversion. Also, there would be no significant change in the amount of materials used or the amount of waste produced.

Because new sources are expected to comply with the proposed standards through the use of low-HAP coating technologies rather than add-on control devices, there would be no significant change in energy usage or waste production.

#### V. Administrative Requirements

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

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

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the

economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

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

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

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

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

##### B. Executive Order 13132, Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

Under section 6 of Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. The EPA also may not issue a regulation that has federalism implications and that preempts State law, unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

This proposed rule 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. Pursuant to the

terms of Executive Order 13132, it has been determined that this rule does not have "federalism implications," because it does not meet the necessary criteria. Thus, the requirements of section 6 of the Executive Order do not apply to this proposed rule.

*C. Executive Order 13084, Consultation and Coordination With Indian Tribal Governments*

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to OMB, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities." Today's proposed rule does not significantly or uniquely affect the communities of Indian tribal governments. No tribal governments own or operate large appliance surface coating facilities. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this action.

*D. Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks*

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, EPA must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Executive Order has the potential to influence the regulation. This proposed rule is not subject to Executive Order 13045 because it does not establish an environmental standard based on an assessment of health or safety risks. No children's risk analysis was performed because no alternative technologies exist that would provide greater stringency at a reasonable cost. Furthermore, this rule has been determined not to be "economically significant" as defined under Executive Order 12866.

*E. Unfunded Mandates Reform Act of 1995*

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local, and tribal governments, in aggregate, or by the private sector, of \$100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least-costly, most cost-effective, or least-burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least-costly, most cost-effective, or least-burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising

small governments on compliance with the regulatory requirements.

The EPA has determined that this proposed rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any 1 year. The maximum total annual cost of this rule for any year has been estimated to be slightly less than \$2 million. Thus, today's proposed rule is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, EPA has determined that this proposed rule contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments or impose obligations upon them. Therefore, today's proposed rule is not subject to the requirements of section 203 of the UMRA.

*F. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601, et seq.*

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedures 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 the purposes of assessing the impacts of today's proposed rule on small entities, small entity is defined as: (1) A small business ranging from 100-1,000 employees or less than \$3.5 million in annual sales; (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.

In accordance with the RFA and SBREFA, EPA conducted an assessment of the proposed standards on small businesses within the large appliance coating industry. Based on Small Business Administration size definitions and reported sales and employment data, EPA's survey identified 221 facilities that apply surface coatings to large appliances. These facilities, which include major and area sources, are owned by 84 companies. Of these companies, 34 are small businesses. Although small

businesses represent about 40 percent of the companies within the source category, they are expected to incur only 10 percent of the total industry compliance costs. Under the proposed standards, the average annual compliance cost share of sales for small businesses is only 0.20 percent, with 26 of the 34 small businesses not expected to incur any additional costs because they are area sources or are permitted as synthetic minor HAP emission sources. After reviewing the range of costs to be borne by small businesses, EPA has determined the costs are typically small and, thus, certifies that this action will not have a significant impact on a substantial number of small entities.

Although this proposed rule will not have a significant economic impact on a substantial number of small entities, EPA has nonetheless worked aggressively to minimize the impact of this proposed rule on small entities, consistent with our obligations under the CAA. We solicited input from small entities during the data-gathering phase of the proposed rulemaking. We are proposing compliance options which give small entities flexibility in choosing the most cost effective and least burdensome alternative for their operation. For example, a facility could purchase and use low-HAP coatings (*i.e.*, pollution prevention) that meet the proposed standards instead of using add-on capture and control systems. This method of compliance can be demonstrated with minimum burden by using purchase and usage records. No testing of materials would be required, as the facility owner could show that their coatings meet the emission limits by providing formulation data supplied by the manufacturer.

We continue to be interested in the potential impacts of the proposed standards on small entities and welcome comments on issues related to such impacts. For more information, consult the docket for this project.

#### G. Paperwork Reduction Act

The information collection requirements in the proposed rule will be submitted for approval to the OMB under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1954.01) and a copy may be obtained from Sandy Farmer by mail at the Collection Strategies Division (2822), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, by email at farmer.sandy@epa.gov, or by calling (202) 260-2740. A copy may also be downloaded off the internet at <http://>

[www.epa.gov/icr](http://www.epa.gov/icr). The information requirements are not effective until OMB approves them.

The information requirements are based on notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emission standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to 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 proposed standards would require maintaining records of all coatings, thinners, and cleaning materials data and calculations used to determine compliance. This information includes the volume used during each monthly compliance period, mass fraction organic HAP, density, and, for coatings only, volume fraction of coating solids.

If an add-on control device is used, records must be kept of the capture efficiency of the capture system, destruction or removal efficiency of the add-on control device, and the monitored operating parameters. In addition, records must be kept of each calculation of the affected sourcewide emissions for each monthly compliance period and all data, calculations, test results, and other supporting information used to determine this value.

The monitoring, recordkeeping, and reporting burden in the fifth year after the effective date of the promulgated rule is estimated to be 32,000 labor hours at a cost of \$1.50 million for new and existing sources.

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

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

Under the Paperwork Reduction Act, EPA must consider the paperwork burden imposed by any information collection request in a proposed or final rule. The proposed standards will not impose any new information collection requirements beyond those specified in the ICR document.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. By U.S. Postal Service, send comments on the ICR to the Director, Collection Strategies Division; U.S. Environmental Protection Agency (2822); 1200 Pennsylvania Ave., NW, Washington, DC 20460 (or by courier, send comments on the ICR to the Director, Collection Strategies Division; U.S. Environmental Protection Agency (2822); 401 M Street, SW, Room 925H, West Tower; Washington, DC) and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., NW., Washington, DC 20503, marked "Attention: Desk Officer for EPA." Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 22, 2000, a comment to OMB is best assured of having its full effect if OMB receives it by January 22, 2001. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

#### H. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104-113, section 12(d) (15 U.S.C. 272 note), directs EPA to use voluntary consensus standards (VCS) in their regulatory and procurement 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, business practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA directs EPA to provide Congress, through annual reports to the OMB, with

explanations when an agency does not use available and applicable VCS.

This proposed rulemaking involves technical standards. The EPA proposes in this rule to use EPA Methods 1, 1A, 2, 2A, 2C, 2D, 2F, 2G, 3, 3A, 3B, 4, 24, 25, 25A, 204, 204A–F, 311, and 316. Consistent with the NTTAA, EPA conducted searches to identify VCS in addition to these EPA methods. No applicable VCS were identified for EPA Methods 1A, 2A, 2D, 2F, 2G, 204, 204A–F, and 316. The search and review results have been documented and are placed in the docket for this proposed rule.

Two VCS were identified for determining the volume of coating solids (nonvolatiles), and EPA proposes to use them in this rule. The standards are ASTM D2697–86 (Reapproved 1998), “Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings,” and ASTM D6093–97, “Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer.” These standards fill a void in EPA Method 24 which directs that the volume fraction of coating solids be calculated from the coating manufacturer’s formulation. The proposed rule does allow for the use of the volume fraction of coating solids calculated from the coating manufacturer’s formulation, however, test results will take precedence if they do not agree with calculated values.

Six VCS: ASTM D1475–90, ASTM D2369–95, ASTM D3792–91, ASTM D4017–96a, ASTM D4457–85 (Reapproved 1991), and ASTM D5403–93 are already incorporated by reference in EPA Method 24. In addition, we are separately specifying the use of ASTM D1475–90 for measuring the density of individual coating components, such as organic solvents. Five VCS: ASTM D1979–91, ASTM D3432–89, ASTM D4747–87, ASTM D4827–93, and ASTM PS 9–94 are incorporated by reference in EPA Method 311.

In addition to the VCS EPA proposes to use in this rule, the search for emission measurement procedures identified 17 other VCS. The EPA determined that 11 of these 17 standards were impractical alternatives to EPA test methods for the purposes of this proposed rulemaking. Therefore, EPA does not propose to adopt these standards today. The reason for this determination for the 11 methods are discussed below.

The standard ISO 10780:1994, “Stationary Source Emissions—Measurement of Velocity and Volume Flowrate of Gas Streams in Ducts,” is impractical as an alternative to EPA

Method 2 in this proposed rulemaking. This standard, ISO 10780:1994, recommends the use of L-shaped pitots, which historically have not been recommended by EPA because the S type design has large openings which are less likely to plug up with dust.

The standard ASTM D3464–96, “Standard Test Method Average Velocity in a Duct Using a Thermal Anemometer,” is impractical as an alternative to EPA Method 2 for the purposes of this proposed rulemaking primarily because applicability specifications are not clearly defined, e.g., range of gas composition, temperature limits. Also, the lack of supporting quality assurance data for the calibration procedures and specifications, and certain variability issues that are not adequately addressed by the standard limit EPA’s ability to make a definitive comparison of the method in these areas.

The standard EN 12619:1999, “Stationary Source Emissions—Determination of the Mass Concentration of Total Gaseous Organic Carbon at Low Concentrations in Flue Gases—Continuous Flame Ionization Detector Method,” is an impractical alternative to EPA Method 25A for the purposes of this proposed rulemaking. This standard is impractical because it does not measure solvent process vapors in concentrations greater than 40 parts per million (ppm) carbon. A method whose upper limit is 40 ppm carbon has a measurement range too limited to be useful in measuring source emissions.

Five of the 11 voluntary consensus standards are impractical alternatives to EPA test methods for the purposes of this proposed rulemaking because they are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements: ASME C00031 or PTC 19–10–1981—Part 10, “Flue and Exhaust Gas Analyses,” for EPA Method 3; ASTM 3796–90 (Reapproved 1996), “Standard Practice for Calibration of Type S Pitot Tubes,” for EPA Method 2; ASTM D3271–87, “Standard Practice for Direct Injection of Solvent-Reducible Paints into a Gas Chromatograph for Solvent Analysis,” for EPA Method 311; ASTM E337–84 (Reapproved 1996), “Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures),” for EPA Method 4; and CAN/CSA Z223.2—M86(1986), “Method for the Continuous Measurement of Oxygen, Carbon Dioxide, Carbon Monoxide, Sulphur Dioxide, and Oxides of Nitrogen in Enclosed Combustion Flue Gas Streams,” for EPA Method 3A.

Three of the 11 VCS are impractical alternatives to EPA test methods for the purposes of this proposed rulemaking because they lacked sufficient quality assurance and quality control requirements necessary for EPA compliance assurance requirements: ASTM D3154–91, “Standard Method for Average Velocity in a Duct (Pitot Tube Method),” for EPA Methods 1, 2, 2C, 3, 3B, and 4; ASTM D5835–95, “Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration,” for EPA Method 3A; and ISO 10396:1993, “Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations,” for EPA Method 3A.

The following six of the 17 VCS identified in this search were not available at the time the review was conducted for the purposes of this proposed rulemaking because they are under development by a voluntary consensus body: ASME/BSR MFC 12M, “Flow in Closed Conduits Using Multiport Averaging Pitot Primary Flowmeters,” for EPA Method 2; ASME/BSR MFC 13M, “Flow Measurement by Velocity Traverse,” for EPA Method 1 (and possibly 2); ISO/DIS 11890–1 Part 1, “Paints and Varnishes—Determination of Volatile Organic Compound (VOC) Content—Difference Method,” for EPA Method 24; ISO/DIS 11890–2 Part 2, “Paints and Varnishes—Determination of Volatile Organic Compound (VOC) Content—Gas Chromatographic Method,” for EPA Method 24; ISO/DIS 12039, “Stationary Source Emissions—Determination of Carbon Monoxide, Carbon Dioxide, and Oxygen—Automated Methods,” for EPA Method 3A; and ISO/FDIS 14965, “Air Quality—Determination of Total Nonmethane Organic Compounds—Cryogenic Preconcentration and Direct Flame Ionization Method,” for EPA Method 25A and parts of Method 25. While we are not proposing to include these six VCS in today’s proposal, EPA will consider the standards when final.

The EPA takes comment on compliance demonstration requirements proposed in this rulemaking and specifically invites the public to identify potentially applicable VCS. Commenters should also explain why this proposed rule should adopt these VCS in lieu of or in addition to EPA’s standards. Emission test methods and performance specifications submitted for evaluation should be accompanied with a basis for the recommendation, including method validation data and the procedure used to validate the candidate method (if a method other than Method 301, 40 CFR part 63, appendix A, was used).



Sections 63.4901, 63.3911, 63.4921, and Table 3 to subpart NNNN of the proposed standards list EPA testing methods included in the proposed rule. Under § 63.8 of subpart A of the General Provisions, a source may apply to EPA for permission to use alternative monitoring in place of any of the EPA testing methods.

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

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

Dated: December 8, 2000.

**Carol M. Browner,**  
*Administrator.*

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

#### PART 63—[AMENDED]

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

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

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

#### Subpart NNNN—National Emission Standards for Hazardous Air Pollutants: Surface Coating of Large Appliances

Sec.

##### What this Subpart Covers

- 63.4080 What is the purpose of this subpart?  
63.4081 Am I subject to this subpart?  
63.4082 What parts of my plant does this subpart cover?  
63.4083 When do I have to comply with this subpart?

##### Emission Limitations

- 63.4090 What emission limits must I meet?  
63.4091 What are my options for meeting the emission limits?  
63.4092 What operating limits must I meet?  
63.4093 What work practice standards must I meet?

##### General Compliance Requirements

- 63.4100 What are my general requirements for complying with this subpart?  
63.4101 What parts of the General Provisions apply to me?

##### Notifications, Reports, and Records

- 63.4110 What notifications must I submit?  
63.4120 What reports must I submit?  
63.4130 What records must I keep?  
63.4131 In what form and for how long must I keep my records?

##### Compliance Requirements for the Compliant Material Option

- 63.4140 By what date must I conduct the initial compliance demonstration?  
63.4141 How do I demonstrate initial compliance with the emission limitations?  
63.4142 How do I demonstrate continuous compliance with the emission limitations?

##### Compliance Requirements for the Emission Rate Without Add-On Controls Option

- 63.4150 By what date must I conduct the initial compliance demonstration?  
63.4151 How do I demonstrate initial compliance with the emission limitations?  
63.4152 How do I demonstrate continuous compliance with the emission limitations?

##### Compliance Requirements for the Emission Rate With Add-On Controls Option

- 63.4160 By what date must I conduct performance tests and other initial compliance demonstrations?  
63.4161 How do I demonstrate initial compliance?  
63.4162 How do I determine the organic HAP emission rate for a controlled coating operation not using a material balance if I operate it under different sets of representative operating conditions?  
63.4163 How do I demonstrate continuous compliance with the emission limitations?  
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##### What this Subpart Covers

#### § 63.4080 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants for large appliance surface

coating facilities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.

#### § 63.4081 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a facility that applies coatings to large appliances and is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAP), except as provided in paragraphs (a)(1)(i) and (ii) of this section.

(1) The large appliance surface coating source category includes any facility engaged in the surface coating of any large appliance part or product. Large appliance parts and products include, but are not limited to, heating and air conditioning units and parts, chillers, household refrigerators and home and farm freezers, household laundry equipment, household cooking equipment, dishwashers, floor waxes and polishers, garbage disposal units, trash compactors, and water heaters.

(i) The surface coating of small items such as metal or plastic handles, hinges, or fasteners that have a wider use beyond large appliances are not subject to this subpart if the surface coating occurs at a facility that does not apply coatings to other large appliance items.

(ii) The surface coating of large appliances conducted for the purpose of repairing or maintaining large appliances used by a facility and not for commerce is not subject to this subpart, unless organic HAP emissions from the surface coating itself are as high as the rates specified in paragraph (a)(4) of this section.

(2) The large appliance surface coating activities and equipment to which this subpart applies are listed in paragraphs (a)(2)(i) through (viii) of this section:

- (i) Surface preparation of the large appliance parts and products;  
(ii) Preparation of a coating for application (*e.g.*, mixing in thinners and other components);  
(iii) Application of a coating to large appliance parts and products using, for example, spray guns or dip tanks;  
(iv) Flash-off, drying, or curing following the coating application operation;  
(v) Cleaning of equipment used in coating operations (*e.g.*, application equipment, hangers, racks);  
(vi) Storage of coatings, thinners, and cleaning materials;  
(vii) Conveying of coatings, thinners, and cleaning materials from storage areas to mixing areas or coating application areas, either manually (*e.g.*, in buckets) or by automated means (*e.g.*,

transfer through pipes using pumps); and

(viii) Handling and conveying of waste materials generated by coating operations.

(3) This subpart does not apply to research or laboratory facilities; janitorial, building, and facility maintenance operations; or coating applications using hand-held nonrefillable aerosol containers.

(4) A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year or any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year.

(b) You are not subject to this subpart if your large appliance surface coating facility is located at, or is part of, an area source of HAP emissions. An area source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that is not a major source.

#### **63.4082 What parts of my plant does this subpart cover?**

(a) This subpart applies to each new, reconstructed, and existing affected source.

(b) The affected source is the collection of all of the items listed in paragraphs (b)(1) through (4) of this section that are part of the large appliance surface coating facility:

(1) All coating operations as defined in § 63.4181;

(2) All storage containers and mixing vessels in which organic-HAP-containing coatings, thinners, and cleaning materials are stored or mixed;

(3) All manual and automated equipment and containers used for conveying organic-HAP-containing coatings, thinners, and cleaning materials; and

(4) All storage containers and all manual and automated equipment and containers used for conveying organic-HAP-containing waste materials generated by a coating operation.

(c) An affected source is a new affected source if you commenced its construction after December 22, 2000, and the construction is of a completely new large appliance surface coating facility where previously no large appliance surface coating facility had existed.

(d) An affected source is reconstructed if you meet the criteria as defined in § 63.2.

(e) An affected source is existing if it is not new or reconstructed.

#### **§ 63.4083 When do I have to comply with this subpart?**

(a) If you have a new or reconstructed affected source, you must meet the applicable date in paragraph (a)(1) or (2) of this section:

(1) If the startup of your new or reconstructed affected source is before [the effective date of this subpart], you must comply with the requirements for new and reconstructed sources no later than [the effective date of this subpart].

(2) If the startup of your new or reconstructed affected source occurs after [the effective date of this subpart], you must comply with the requirements for new and reconstructed sources upon initial startup of your affected source.

(b) If you have an existing affected source, you must comply with the requirements for existing sources no later than [3 years after the effective date of this subpart].

(c) If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP emissions, you must meet the dates specified in paragraphs (c)(1) and (2) of this section.

(1) For any portion of the area source that becomes a new or reconstructed affected source, you must comply with the requirements for new and reconstructed sources upon initial startup or no later than [the effective date of this subpart], whichever is later.

(2) For any portion of the area source that becomes an existing affected source, you must comply with the requirements for existing sources no later than 1 year after the area source becomes a major source or [3 years after the effective date of this subpart], whichever is later.

(d) You must meet the notification requirements in § 63.4110 according to the dates specified in that section and in subpart A of this part. Some of the notifications must be submitted before the compliance dates described in paragraphs (a) through (c) of this section.

#### **Emission Limitations**

##### **§ 63.4090 What emission limits must I meet?**

(a) For an existing affected source, you must limit organic HAP emissions to the atmosphere to no more than 0.13 kilogram per liter (kg/liter) (1.1 pound per gallon (lb/gal) of coating solids used during each compliance period.

(b) For a new or reconstructed affected source, you must limit organic HAP emissions to the atmosphere to no more than 0.022 kg/liter (0.18 lb/gal) of coating solids used during each compliance period.

##### **§ 63.4091 What are my options for meeting the emission limits?**

To meet the emission limits in § 63.4090, you must use at least one of the three compliance options listed in paragraphs (a) through (c) of this section. You may apply any of the compliance options to an individual coating operation or to multiple coating operations as a group or to the entire affected source. You may use different compliance options for different coating operations or at different times on the same coating operation. However, you may not use different compliance options at the same time on the same coating operation. If you switch between compliance options for any coating operation or group of coating operations, you must document this switch as required by § 63.4130(c), and you must report it in the next semiannual compliance report required in § 63.4120.

(a) *Compliant material option.* Demonstrate that the organic HAP content of each coating used in the coating operation(s) is less than or equal to the applicable emission limit in § 63.4090 and that each thinner and each cleaning material used contains no organic HAP. You must meet all the requirements of §§ 63.4140, 63.4141, and 63.4142 to demonstrate compliance with the emission limit using this option.

(b) *Emission rate without add-on controls option.* Demonstrate that, based on data on the coatings, thinners, and cleaning materials used in the coating operation(s), the organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limit in § 63.4090. You must meet all the requirements of §§ 63.4150, 63.4151, and 63.4152 to demonstrate compliance with the emission limit using this option.

(c) *Emission rate with add-on controls option.* Demonstrate that, based on data on the coatings, thinners, and cleaning materials used in the coating operation(s), and the emission capture and add-on control efficiencies achieved, the organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limit in § 63.4090. If you use this compliance option, you must also demonstrate that all capture systems and control devices for the coating operation(s) meet the operating limits required in § 63.4092, except for solvent recovery systems for which you conduct liquid-liquid material balances according to § 63.4161(h); and that you meet the work practice standards required in § 63.4093. You must meet all the requirements of §§ 63.4160 through

63.4168 to demonstrate compliance with the emission limits, operating limits, and work practice standards using this option.

**§ 63.4092 What operating limits must I meet?**

(a) For any coating operation(s) on which you use the compliant material option or the emission rate without add-on controls option, you are not required to meet any operating limits. For any controlled coating operation(s) on which you use the emission rate with add-on controls option, except those for which you use a solvent recovery system and conduct a liquid-liquid material balance according to § 63.4161(h), you must meet the operating limits specified in Table 1 of this subpart. These operating limits apply to the emission capture and control systems on the coating operation(s) for which you use this option, and you must establish the operating limits during the performance test according to the procedures in § 63.4167. You must meet the operating limits at all times after you establish them.

(b) If you use a control device other than those listed in Table 1 of this subpart, or wish to monitor an alternative parameter and comply with a different operating limit, you must apply to the Administrator for approval of alternative monitoring under § 63.8(f).

**§ 63.4093 What work practice standards must I meet?**

For any coating operation(s) on which you use the compliant material option or the emission rate without add-on controls option, you are not required to meet any work practice standards. If you use the emission rate with add-on controls option, you must develop and implement a work practice plan to minimize organic HAP emissions from the storage, mixing, and conveying of coatings, thinners, and cleaning materials used in, and waste materials generated by, the controlled coating operation(s) for which you use this option; or you must meet an alternative standard as provided in paragraph (e) of this section. The plan must address at a minimum the elements specified in paragraphs (a) through (d) of this section.

(a) All organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be stored in closed containers.

(b) Spills of organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be minimized.

(c) Organic-HAP-containing coatings, thinners, cleaning materials, and waste

materials must be conveyed from one location to another in closed containers or pipes.

(d) Mixing vessels used for organic-HAP-containing coatings and other materials must be closed except when adding to, removing, or mixing the contents.

(e) As provided in § 63.6(g), we, EPA, may choose to grant you permission to use an alternative to the work practice standards in this section.

**General Compliance Requirements**

**§ 63.4100 What are my general requirements for complying with this subpart?**

(a) You must be in compliance with the emission limitations in this subpart as specified in paragraphs (a)(1) and (2) of this section.

(1) Any coating operation(s) for which you use the compliant material option or the emission rate without add-on controls option, as specified in § 63.4091(a) and (b), must be in compliance with the applicable emission limit in § 63.4090 at all times.

(2) Any coating operation(s) for which you use the emission rate with add-on controls option, as specified in § 63.4091(c), must be in compliance with the applicable emission limit in § 63.4090 at all times except during periods of startup, shutdown, and malfunction. Each controlled coating operation must be in compliance with the operating limits for emission capture systems and add-on control devices required by § 63.4092 at all times, except during periods of startup, shutdown, and malfunction, and except for solvent recovery systems for which you conduct liquid-liquid material balances according to § 63.4161(h). Each controlled coating operation must be in compliance with the work practice standards in § 63.4093 at all times.

(b) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in § 63.6(e)(1)(i).

(c) If your affected source uses an emission capture system and add-on control device, you must maintain a log detailing the operation and maintenance of the emission capture system, add-on control device, and continuous parameter monitors during the period between the compliance date specified for your affected source in § 63.4083 and the date when the initial emission capture system and add-on control device performance tests have been completed, as specified in § 63.4160. This requirement does not apply to a solvent recovery system for which you

conduct a liquid-liquid material balance according to § 63.4161(h).

(d) If your affected source uses an emission capture system and add-on control device, you must develop and implement a written startup, shutdown, and malfunction plan according to the provisions in § 63.6(e)(3). The plan must address the startup, shutdown, and corrective actions in the event of a malfunction of the emission capture system or the add-on control device. The plan must also address any coating operation equipment that may cause increased emissions or that would affect capture efficiency if the process equipment malfunctions, such as conveyors that move parts among enclosures.

**§ 63.4101 What parts of the General Provisions apply to me?**

Table 2 of this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

**Notifications, Reports, and Records**

**§ 63.4110 What notifications must I submit?**

(a) You must submit the notifications in §§ 63.7(b) and (c), 63.8(f)(4), and 63.9(b) through (e) and (h) that apply to you by the dates specified in those sections, except as provided in paragraphs (a)(1) and (2) of this section.

(1) You must submit the Initial Notification required by § 63.9(b) for an existing affected source no later than [1 year after the effective date of this subpart]. For a new or reconstructed affected source, you must submit the Initial Notification no later than 120 days after initial startup or [120 days after the effective date of this subpart], whichever is later.

(2) You must submit the Notification of Compliance Status required by § 63.9(h) no later than 30 calendar days following the end of the initial compliance period described in § 63.4140, § 63.4150, or § 63.4160 that applies to your affected source.

(b) The Notification of Compliance Status must contain the information specified in paragraphs (b)(1) through (9) of this section and in § 63.9(h).

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of the report and beginning and ending dates of the reporting period. The reporting period is the initial compliance period described in § 63.4140, § 63.4150, or § 63.4160 that applies to your affected source.

(4) Identification of the compliance option or options specified in § 63.4091 that you used on each coating operation during the initial compliance period.

(5) Statement of whether or not the affected source achieved the emission limitations for the initial compliance period.

(6) If you had a deviation, include the information in paragraphs (b)(6)(i) and (ii) of this section.

(i) A description of and statement of the cause of the deviation.

(ii) If you failed to meet the applicable emission limit in § 63.4090, include all the calculations you used to determine the kg organic HAP per liter coating solids. You do not need to submit information provided by the materials suppliers or manufacturers or test reports.

(7) For each of the data items listed in paragraphs (b)(7)(i) through (iv) of this section that is required by the compliance option(s) you used to demonstrate compliance with the emission limit, include an example of how you determined the value, including calculations and supporting data. Supporting data can include a copy of the information provided by the supplier or manufacturer of the example coating or material or a summary of the results of testing conducted according to § 63.4141(a), (b), or (c). You do not need to submit copies of any test reports.

(i) Mass fraction of organic HAP for one coating, for one thinner, and for one cleaning material.

(ii) Volume fraction of coating solids for one coating.

(iii) Density for one coating, one thinner, and one cleaning material, except that if you use the compliant material option, only the example coating density is required.

(iv) The information specified in § 63.4151(e)(4) for any waste materials sent to a treatment, storage, and disposal facility (TSDF), if you are claiming an allowance for organic HAP contained in those waste materials in Equation 1 of § 63.4151.

(8) The calculation of kg organic HAP per liter coating solids for the compliance option(s) you use, as specified in paragraphs (b)(8)(i) through (iii) of this section.

(i) For the compliant material option, provide an example calculation of the organic HAP content ( $H_c$ ) for one coating, using Equation 2 of § 63.4141.

(ii) For the emission rate without add-on controls option, provide the calculation of the total mass of organic HAP emissions ( $H_e$ ); the calculation of the total volume of coating solids ( $V_{st}$ ); and the calculation of the organic HAP

emission rate ( $H_{avg}$ ), using Equations 1, 2, and 3, respectively, of § 63.4151.

(iii) For the emission rate with add-on controls option, provide the calculation of the total mass of organic HAP emissions ( $H_e$ ) in the coatings, thinners, and cleaning materials used in the coating operation(s), using Equation 1 of § 63.4151; and the calculation of the organic HAP emission rate ( $H_{HAP}$ ), using either Equation 4 of § 63.4161 or Equation 1 of § 63.4162, as applicable.

(9) For the emission rate with add-on controls option, you must include the information specified in paragraphs (b)(9)(i) through (iv) of this section.

(i) For each emission capture system, a summary of the data and copies of the calculations supporting the determination that the emission capture system is a permanent total enclosure (PTE) or a measurement of the emission capture system efficiency. Include a description of the protocol followed for measuring capture efficiency, summaries of any capture efficiency tests conducted, and any calculations supporting the capture efficiency determination. If you use the data quality objective (DQO) or lower confidence limit (LCL) approach, you must also include the statistical calculations to show you meet the DQO or LCL criteria in appendix A to subpart KK of this part. You do not need to submit complete test reports.

(ii) A summary of the results of each add-on control device performance test. You do not need to submit complete test reports.

(iii) A list of each emission capture system's and add-on control device's operating limits and a summary of the data used to calculate those limits.

(iv) A statement of whether or not you developed and implemented the work practice plan required by § 63.4093.

#### § 63.4120 What reports must I submit?

You must submit semiannual compliance reports according to the requirements of this section. The reporting requirements of this section may be satisfied by reports required under other parts of the Clean Air Act (CAA or Act), as specified in paragraph (a)(5) of this section.

(a) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must prepare and submit each semiannual compliance report according to the dates specified in paragraphs (a)(1) through (4) of this section.

(1) The first report must cover the first semiannual reporting period which begins the day after the end of the initial compliance period described in

§ 63.4140, § 63.4150, or § 63.4160 that applies to your affected source and ends on June 30 or December 31, whichever date is the first date following the end of the initial compliance period.

(2) Each subsequent semiannual compliance report must cover the subsequent semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(3) Each semiannual compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(4) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the date specified in paragraph (a)(3) of this section.

(5) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a compliance report pursuant to this section along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limitation in this subpart, submission of the compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(b) The semiannual compliance report must contain the information specified in paragraphs (b)(1) through (4) of this section, and the information specified in paragraphs (c) through (j) of this section that is applicable to your affected source.

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31.

(4) Identification of the compliance option or options specified in § 63.4091 that you used on each coating operation during the reporting period. If you switched between compliance options during the reporting period, you must report the beginning and ending dates you used each option.

(c) If there were no deviations from the emission limitations in §§ 63.4090, 63.4092, and 63.4093 that apply to you, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period.

(d) If you use the compliant material option, and there was a deviation from the applicable emission limit in § 63.4090, the semiannual compliance report must contain the information in paragraphs (d)(1) through (4) of this section.

(1) Identification of each coating used that deviated from the emission limit, and each thinner and cleaning material used that contained organic HAP, and the dates and time periods each was used.

(2) The calculation of the organic HAP content ( $H_c$ , using Equation 2 of § 63.4141) for each coating identified in paragraph (d)(1) of this section. You do not need to submit background data supporting this calculation, for example, information provided by coating suppliers or manufacturers, or test reports.

(3) The determination of mass fraction of organic HAP for each thinner and cleaning material identified in paragraph (d)(1) of this section. You do not need to submit background data supporting this calculation, for example, information provided by material suppliers or manufacturers, or test reports.

(4) A statement of the cause of each deviation.

(e) If you use the emission rate without add-on controls option, and there was a deviation from the applicable emission limit in § 63.4090, the semiannual compliance report must contain the information in paragraphs (e)(1) through (3) of this section.

(1) The beginning and ending dates of each compliance period during which the organic HAP emission rate exceeded the emission limit.

(2) The calculations used to determine the organic HAP emission rate for the compliance period in which the deviation occurred. You must submit the calculations for Equations 1, 1A

through C, 2, and 3 in § 63.4151; and the calculation used to determine  $R_w$  according to § 63.4151(e)(4). You do not need to submit background data supporting these calculations, for example, information provided by materials suppliers or manufacturers, or test reports.

(3) A statement of the cause of each deviation.

(f) If you use the emission rate with add-on controls option and there were no periods during which the continuous parameter monitoring systems were out-of-control as specified in § 63.8(c)(7), the semiannual compliance report must include a statement that there were no periods during which the continuous parameter monitoring systems were out-of-control during the reporting period.

(g) If you use the emission rate with add-on controls option, and there was a deviation from an emission limitation (including any periods when emissions bypassed the add-on control device and were diverted to the atmosphere), the semiannual compliance report must contain the information in paragraphs (g)(1) through (14) of this section. This includes periods of startup, shutdown, and malfunction during which deviations occurred.

(1) The beginning and ending dates of each compliance period during which the organic HAP emission rate exceeded the applicable emission limit in § 63.4090.

(2) The calculations used to determine the organic HAP emission rate for each compliance period in which a deviation occurred. You must submit the calculations that apply to you, including Equations 1, 1A through C, and 2 of § 63.4151; Equations 1, 1A through C, 2, and 3 of § 63.4161; and either Equation 4 of § 63.4161 or Equation 1 of § 63.4162, as applicable. You do not need to submit the background data supporting these calculations, for example information provided by materials suppliers or manufacturers, or test reports.

(3) The date and time that each malfunction started and stopped.

(4) A brief description of the continuous parameter monitoring system.

(5) The date of the latest continuous parameter monitoring system certification or audit.

(6) The date and time that each continuous parameter monitoring system was inoperative, except for zero (low-level) and high-level checks.

(7) The date, time, and duration that each continuous parameter monitoring system was out-of-control, including the information in § 63.8(c)(8).

(8) The date and time that each deviation from an operating limit in Table 1 of this subpart; date and duration of any bypass of the add-on control device; and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(9) A summary of the total duration of each deviation from an operating limit in Table 1 of this subpart and bypass of the add-on control device during the semiannual reporting period and the total duration as a percent of the total source operating time during that semiannual reporting period.

(10) A breakdown of the total duration of the deviations from the operating limits in Table 1 of this subpart and bypasses of the add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(11) A summary of the total duration of continuous parameter monitoring system downtime during the semiannual reporting period and the total duration of continuous parameter monitoring system downtime as a percent of the total source operating time during that semiannual reporting period.

(12) A description of any changes in the continuous parameter monitoring system, coating operation, emission capture system, or add-on control device since the last semiannual reporting period.

(13) For each deviation from the work practice standards, a description of the deviation; the date, time, and duration of the deviation; and the actions you took to correct the deviation.

(14) A statement of the cause of each deviation.

(h) If you use the emission rate with add-on controls option, you must submit reports of performance test results for emission capture systems and add-on control devices no later than 60 days after completing the tests as specified in § 63.10(d)(2).

(i) [Reserved]

(j) If you use the emission rate with add-on controls option and you have a startup, shutdown, or malfunction during the semiannual reporting period, you must submit the reports specified in paragraphs (j)(1) and (2) of this section.

(1) If your actions were consistent with your startup, shutdown, and malfunction plan, you must include the information specified in § 63.10(d) in the semiannual compliance report.

(2) If your actions were not consistent with your startup, shutdown, and malfunction plan, you must submit an

immediate startup, shut down, and malfunction report as described in paragraph (j)(2)(i) and (ii) of this section.

(i) You must describe the actions taken during the event in a report delivered by facsimile or by telephone to the Administrator within 2 working days after starting actions that are inconsistent with the plan.

(ii) You must submit a letter to the Administrator within 7 working days after the end of the event, unless you have made alternative arrangements with the Administrator as specified in § 63.10(d)(5)(ii). The letter must contain the information specified in § 63.10(d)(5)(ii).

#### § 63.4130 What records must I keep?

You must collect and keep a record of the data and information specified in this section. Failure to collect and keep these records is a deviation from the applicable standard.

(a) A copy of each notification and report that you submitted to comply with this subpart, and the documentation supporting each notification and report.

(b) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data or test data used to determine the mass fraction of organic HAP and density for coatings, thinners, and cleaning materials and the volume fraction of coating solids. If you conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, you must keep a copy of the complete test report. If you use information provided to you by the manufacturer or supplier of the material that was based on testing, you must keep the summary sheet of results provided to you by the manufacturer or supplier. You are not required to obtain the test report or other supporting documentation from the manufacturer or supplier.

(c) For each compliance period, a record of the time periods (beginning and ending dates) and the coating operations at which each compliance operation was used, and a record of all calculations of kg organic HAP per liter of coating solids for the compliance option(s) you used, as specified in paragraphs (c)(1) through (3) of this section.

(1) For the compliant material option, the calculation of the organic HAP content ( $H_c$ ) for each coating, using Equation 2 of § 63.4141.

(2) For the emission rate without add-on controls option, the calculation of the total mass of organic HAP emissions ( $H_c$ ), the calculation of the total volume of coating solids ( $V_{cs}$ ), and the

calculation of the organic HAP emission rate ( $H_{avg}$ ), using Equations 1, 2, and 3, respectively, of § 63.4151.

(3) For the emission rate with add-on controls option, the calculation of the total mass of organic HAP emissions ( $H_c$ ) in the coatings, thinners, and cleaning materials used, using Equation 1 of § 63.4151; the calculation of the mass of organic HAP emissions reduced by emission capture systems and add-on control devices ( $H_C$  and  $H_{CSR}$ ), using Equations 1 and 3, respectively, of § 63.4161; and the calculation of the organic HAP emission rate ( $H_{HAP}$ ), using either Equation 4 of § 63.4161 or Equation 1 of § 63.4162, as applicable.

(d) A record of the name and volume of each coating, thinner, and cleaning material used during each compliance period.

(e) A record of the mass fraction of organic HAP for each coating, thinner, and cleaning material used during each compliance period.

(f) A record of the volume fraction of coating solids for each coating used during each compliance period.

(g) A record of the density for each coating used during each compliance period; and, if you use either the emission rate without add-on controls or the emission rate with add-on controls compliance option, the density for each thinner and cleaning material used during each compliance period.

(h) If you are claiming an allowance for organic HAP in waste materials sent to a TSDF according to § 63.4151(e)(4), you must keep records of the mass of organic HAP in the waste materials sent to a TSDF during each compliance period with supporting calculations and documentation, including the waste manifest for each shipment and any additional documentation that provides the information in paragraphs (h)(1) through (5) of this section.

(1) The date of the shipment and the TSDF to which the waste was shipped;

(2) A brief description of the waste, including the operations producing the waste;

(3) The amount of waste in the shipment;

(4) The kg organic HAP contained in the shipment, including calculations of the HAP content; and

(5) Any information used to calculate the kg organic HAP contained in the shipment that is not shown on the waste manifest.

(i) [Reserved]

(j) You must keep records of the date, time, and duration of each deviation.

(k) If you use the emission rate with add-on controls option, you must keep the records specified in paragraphs (k)(1) through (9) of this section.

(1) For each deviation, a record of whether the deviation occurred during a period of startup, shutdown, or malfunction.

(2) The records in § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) The records required to show continuous compliance with each operating limit specified in Table 1 of this subpart that applies to you.

(4) If you operate under multiple operating conditions that affect emission capture system efficiency or add-on control device organic HAP destruction or removal efficiency, and you are using different emission capture system efficiency or add-on control device organic HAP destruction or removal efficiency factors for each condition, then you must keep records of the data needed to calculate the organic HAP emission rate for each compliance period, as described by Equation 1 in § 63.4162.

(5) For each capture system that is a PTE, the data and documentation needed to support a determination that the capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and has a capture efficiency of 100 percent, as specified in § 63.4165(a).

(6) For each capture system that is not a PTE, the data and documentation needed to determine capture efficiency according to the procedures specified in §§ 63.4164 and 63.4165(b), (c), or (d) including the records specified in paragraphs (k)(6)(i) through (iii) of this section that apply to you.

(i) *Records for a liquid-to-fugitive protocol using a temporary total enclosure or building enclosure.* Records of the mass of total volatile hydrocarbon (TVH) as measured by Method 204A or F of appendix M to 40 CFR part 51 for each material used in the coating operation, and the total TVH for all materials used during each capture efficiency test run, including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run, as measured by Method 204D or E of appendix M to 40 CFR part 51, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR part 51 for either a temporary total enclosure or a building enclosure.

(ii) *Records for a gas-to-gas protocol using a temporary total enclosure or a building enclosure.* Records of the mass of TVH emissions captured by the

emission capture system as measured by Method 204B or C of appendix M to 40 CFR part 51 at the inlet to the add-on control device, including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run, as measured by Method 204D or E of appendix M to 40 CFR part 51, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR part 51 for either a temporary total enclosure or a building enclosure.

(iii) *Records for an alternative protocol.* Records needed to document a capture efficiency determination using an alternative method or protocol as specified in § 63.4165(e), if applicable.

(7) The records specified in paragraphs (k)(7)(i) and (ii) of this section for each add-on control device organic HAP destruction or removal efficiency determination as specified in § 63.4166.

(i) Records of each add-on control device performance test conducted according to §§ 63.4164 and 63.4166.

(ii) Records of the coating operation conditions during the add-on control device performance test needed to document that the performance test was conducted under representative operating conditions.

(8) Records of the data and calculations needed to establish the emission capture and add-on control device operating limits as specified in § 63.4167 and to document compliance with the operating limits as specified in Table 1 of this subpart.

(9) A record of the work practice plan required by § 63.4093, and documentation that you are implementing the plan on a continuous basis.

**§ 63.4131 In what form and for how long must I keep my records?**

(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database.

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep

the records off site for the remaining 3 years.

**Compliance Requirements for the Compliant Material Option**

**§ 63.4140 By what date must I conduct the initial compliance demonstration?**

You must complete the compliance demonstration for the initial compliance period according to the requirements in § 63.4141. The initial compliance period begins on the applicable compliance date specified in § 63.4083 and ends on the last day of the first full calendar month after the compliance date. The initial compliance demonstration includes the calculations showing that you used no coating with an organic HAP content that exceeded the applicable limit in § 63.4090, and documentation that you used no thinners or cleaning materials that contained organic HAP as determined by the procedures listed in § 63.4141(a) during the compliance period.

**§ 63.4141 How do I demonstrate initial compliance with the emission limitations?**

You may use the compliant material option for any individual coating operation, for any group of coating operations in the affected source, or for all the coating operations in the affected source. You must use either the emission rate without add-on controls option or the emission rate with add-on controls option for any coating operation(s) in the affected source for which you do not use this option. To demonstrate initial compliance using the compliant material option, the coating operation or group of coating operations must use no coating with an organic HAP content that exceeds the applicable emission limit in § 63.4090 and must use no thinner or cleaning material that contains organic HAP, as determined according to this section. Any coating operation(s) for which you use the compliant material option is not required to meet the operating limits or work practice standards required in §§ 63.4092 and 63.4093, respectively. To demonstrate initial compliance with the emission limitations using the compliant material option, you must meet all the requirements of this section for the coating operation(s) using this option. Use the procedures in this section on each coating, thinner, and cleaning material in the condition it is in when it is received from its manufacturer or supplier and prior to any alteration.

(a) *Determine the mass fraction of organic HAP for each material used.* You must determine the mass fraction of organic HAP for each coating, thinner, and cleaning material used during the

compliance period by using one of the options in paragraphs (a)(1) through (5) of this section.

(1) *Method 311 (appendix A to 40 CFR part 63).* You may use Method 311 for determining the mass fraction of organic HAP. Use the procedures specified in paragraphs (a)(1)(i) and (ii) of this section when performing a Method 311 test.

(i) Count each organic HAP that is measured to be present at 0.1 percent by mass or more for Occupational Safety and Health Administration (OSHA)—defined carcinogens as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is measured to be 0.5 percent of the material by mass, you don't have to count it. Express the mass fraction of each organic HAP you count as a value truncated to four places after the decimal point (for example, 0.3791).

(ii) Calculate the total mass fraction of organic HAP in the test material by adding up the individual organic HAP mass fractions and truncating the result to three places after the decimal point (for example, 0.763).

(2) *Method 24 (appendix A to 40 CFR part 60).* For coatings, you may use Method 24 to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for mass fraction of organic HAP.

(3) *Alternative method.* You may use an alternative test method for determining the mass fraction of organic HAP once the Administrator has approved it. You must follow the procedure in § 63.7(f) to submit an alternative test method for approval.

(4) *Information from the supplier or manufacturer of the material.* You may rely on information other than that generated by the test methods specified in paragraphs (a)(1) through (3) of this section, such as manufacturer's formulation data. Count each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is 0.5 percent of the material by mass, you don't have to count it. If there is a disagreement between such information and results of the test methods specified in paragraphs (a)(1) through (3) of this section, then the test method results will take precedence.

(5) *Solvent blends.* Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic HAP which

must be counted toward the total organic HAP mass fraction of the materials. When test data for solvent blends are not available, you may use the value for mass fraction of organic HAP listed in Table 3 or 4 of this subpart. If you use the tables, you must use the values in Table 3 for all solvent blends that match Table 3 entries, and you may only use Table 4 if the solvent blends in the materials you use do not match any of the solvent blends in Table 3 and you only know whether the blend is aliphatic or aromatic. However, if the results of Method 311 indicate higher values than those listed on Table 3 or 4 of this subpart, the Method 311 results will take precedence.

(b) *Determine the volume fraction of coating solids for each coating.* You must determine the volume fraction of coating solids (liters of coating solids per liter of coating) for each coating used during the compliance period by a test, by information provided by the supplier or the manufacturer of the material, or by calculation as specified in paragraphs (b)(1) through (3) of this section. The results obtained with paragraph (b)(1) of this section will take precedence if they do not agree with the results obtained with paragraph (b)(2) or (3) of this section.

(1) *ASTM Method D2697-86(1998) or D6093-97.* You may use ASTM Method D2697-86(1998) or D6093-97 to determine the volume fraction of coating solids for each coating. Multiply the nonvolatile volume percent obtained with the methods by 100 to calculate volume fraction of coating solids.

(2) *Information from the supplier or manufacturer of the material.* You may obtain the volume fraction of coating solids for each coating from the supplier or manufacturer.

(3) *Calculation of volume fraction of coating solids,  $V_s$ .* If the volume fraction of coating solids cannot be determined using the options in paragraphs (b)(1) and (2) of this section, you must determine it using Equation 1 of this section:

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}} \quad (\text{Eq. 1})$$

Where:

$V_s$  = Volume fraction of coating solids, liters coating solids per liter coating.

$m_{\text{volatiles}}$  = Total volatile matter content of the coating, including HAP, volatile organic compounds (VOC), water, and exempt compounds, determined according to Method 24 in appendix A of 40 CFR part 60, grams volatile matter per liter coating.

$D_{\text{avg}}$  = Average density of volatile matter in the coating, grams volatile matter per liter volatile matter, determined from test results using ASTM Method D1475-98, information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If there is disagreement between ASTM Method D1475-98 test results and other information sources, the test results will take precedence.

(c) *Determine the density of each coating.* Determine the density of each coating used during the compliance period from test results using ASTM Method D1475-98, information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If there is disagreement between ASTM Method D1475-98 test results and other information sources, the test results will take precedence.

(d) *Calculate the organic HAP content of each coating.* Calculate  $H_c$ , the organic HAP content, kg organic HAP per liter coating solids, of each coating used during the compliance period, using Equation 2 of this section:

$$H_c = (D_c)(W_c)/V_s \quad (\text{Eq. 2})$$

Where:

$H_c$  = Organic HAP content of the coating, kg organic HAP per liter coating solids.

$D_c$  = Density of coating, kg coating per liter coating, determined according to paragraph (c) of this section.

$W_c$  = Mass fraction of organic HAP in the coating, kg organic HAP per kg coating, determined according to paragraph (a) of this section.

$V_s$  = Volume fraction of coating solids, liters coating solids per liter coating, determined according to paragraph (b) of this section.

(e) *Compliance demonstration.* The calculated organic HAP content,  $H_c$ , for each coating used during the initial compliance period must be less than or equal to the applicable emission limit in § 63.4090; and each thinner and cleaning material used during the initial compliance period must contain no organic HAP, determined according to paragraph (a) of this section. You must keep all records required by §§ 63.4130 and 63.4131. As part of the Notification of Compliance Status required in § 63.4110, you must identify the coating operation(s) for which you used the compliant material option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because you used no

coatings for which the organic HAP content exceeds the applicable emission limit in § 63.4090, and you used no thinners or cleaning materials that contain organic HAP.

#### § 63.4142 How do I demonstrate continuous compliance with the emission limitations?

(a) For each compliance period, to demonstrate continuous compliance, you must use no coating for which the organic HAP content,  $H_c$ , determined using Equation 2 of § 63.4141, exceeds the applicable emission limit in § 63.4090, and use no thinner or cleaning material that contains organic HAP, determined according to § 63.4141(a). Each calendar month following the initial compliance period described in § 63.4140 is a compliance period.

(b) If you choose to comply with the emission limitations by using the compliant material option, the use of any coating, thinner, or cleaning material that does not meet the criteria specified in paragraph (a) of this section is a deviation from the emission limitations that must be reported as specified in §§ 63.4110(b)(6) and 63.4120(d).

(c) As part of each semiannual compliance report required by § 63.4120, you must submit a statement that you were in compliance with the emission limitations during the reporting period because you used no thinners or cleaning materials that contained organic HAP, and you used no coatings for which the organic HAP content exceeded the applicable emission limit in § 63.4090.

(d) You must maintain records as specified in §§ 63.4130 and 63.4131.

#### Compliance Requirements for the Emission Rate Without Add-On Controls Option

##### § 63.4150 By what date must I conduct the initial compliance demonstration?

You must complete the compliance demonstration for the initial compliance period according to the requirements of § 63.4151. The initial compliance period begins on the applicable compliance date specified in § 63.4083 and ends on the last day of the first full calendar month after the compliance date. The initial compliance demonstration includes the calculations showing that the organic HAP emission rate for the initial compliance period was equal to or less than the applicable emission limit in § 63.4090.



**§ 63.4151 How do I demonstrate initial compliance with the emission limitations?**

You may use the emission rate without add-on controls option for any individual coating operation, for any group of coating operations in the affected source, or for all the coating operations in the affected source. You must use either the compliant material option or the emission rate with add-on controls option for any coating operation(s) in the affected source for which you do not use this option. To demonstrate initial compliance using the emission rate without add-on controls option, the coating operation(s) must meet the applicable emission limit in § 63.4090 but not the operating limits or work practice standards in §§ 63.4092 and 63.4093, respectively. You must meet all the requirements of this section to demonstrate initial compliance with the applicable emission limit in § 63.4090 for the coating operation(s). When calculating the organic HAP emission rate according to this section, do not include any coatings, thinners, or cleaning materials used on coating operations for which you use the compliant material option or the emission rate with add-on controls option.

(a) *Determine the mass fraction of organic HAP for each material.* Determine the mass fraction of organic HAP for each coating, thinner, and cleaning material used during the compliance period according to the requirements in § 63.4141(a).

(b) *Determine the volume fraction of coating solids for each coating.* Determine the volume fraction of coating solids for each coating used during the compliance period according to the requirements in § 63.4141(b).

(c) *Determine the density of each material.* Determine the density of each coating, thinner, and cleaning material used during the compliance period according to the requirements in § 63.4141(c).

(d) *Determine the volume of each material used during the compliance period.* Determine the volume (liters) of each coating, thinner, and cleaning material used during the compliance period by measurement or usage records.

(e) *Calculate the mass of organic HAP emissions during the compliance period.* The mass of organic HAP emissions,  $H_e$ , is the combined mass of organic HAP contained in all coatings, thinners, and cleaning materials used during the compliance period minus the organic HAP in certain waste materials. Calculate  $H_e$  using Equation 1 of this section.

$$H_e = A + B + C - R_w \quad (\text{Eq. 1})$$

Where:

$H_e$  = The total mass of organic HAP emissions during the compliance period, kg.

A = The total mass of organic HAP in the coatings used during the compliance period, kg, as calculated in Equation 1A of this section.

B = The total mass of organic HAP in the thinners used during the compliance period, kg, as calculated in Equation 1B of this section.

C = The total mass of organic HAP in the cleaning materials used during the compliance period, kg, as calculated in Equation 1C of this section.

$R_w$  = The total mass of organic HAP in waste materials sent to a hazardous waste TSDF for treatment or disposal, kg, determined according to paragraph (e)(4) of this section. (You may assign a value of zero to  $R_w$  if you do not wish to use this allowance.)

(1) Calculate A, the kg organic HAP in the coatings used during the compliance period using Equation 1A of this section:

$$A = \sum_{i=1}^m (\text{Vol}_{c,i}) (D_{c,i}) (W_{c,i}) \quad (\text{Eq. 1A})$$

Where:

$\text{Vol}_{c,i}$  = Total volume of coating, i, used during the compliance period, liters.

$D_{c,i}$  = Density of coating, i, kg coating per liter coating.

$W_{c,i}$  = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating.

m = Number of different coatings used during the compliance period.

(2) Calculate B, the kg of organic HAP in the thinners used during the compliance period using Equation 1B of this section:

$$B = \sum_{j=1}^n (\text{Vol}_{t,j}) (D_{t,j}) (W_{t,j}) \quad (\text{Eq. 1B})$$

Where:

$\text{Vol}_{t,j}$  = Total volume of thinner, j, used during the compliance period, liters.

$D_{t,j}$  = Density of thinner, j, kg per liter.

$W_{t,j}$  = Mass fraction of organic HAP in thinner, j, kg organic HAP per kg thinner.

n = Number of different thinners used during the compliance period.

(3) Calculate C, the kg organic HAP in the cleaning materials used during the

compliance period using Equation 1C of this section:

$$C = \sum_{k=1}^p (\text{Vol}_{s,k}) (D_{s,k}) (W_{s,k}) \quad (\text{Eq. 1C})$$

Where:

$\text{Vol}_{s,k}$  = Total volume of cleaning material, k, used during the compliance period, liters.

$D_{s,k}$  = Density of cleaning material, k, kg per liter.

$W_{s,k}$  = Mass fraction of organic HAP in cleaning material, k, kg organic HAP per kg material.

p = Number of different cleaning materials used during the compliance period.

(4) Determine the mass of organic HAP contained in waste materials sent to a TSDF ( $R_w$ ). If you choose to account for the mass of organic HAP contained in waste materials sent to a hazardous waste TSDF in the calculation of  $H_e$  (Equation 1 of this section), then you must include in your Notification of Compliance Status the information specified in paragraphs (e)(4)(i) through (iv) of this section. You may use this allowance only if the waste materials are generated by the coating operations for which you use Equation 1 of this section and are sent to a facility that is regulated as a TSDF under 40 CFR part 262, 264, 265, or 266. You must not make an allowance for organic HAP contained in wastewater.

(i) The name and address of each TSDF to which the waste material was sent during the compliance period and a statement of which regulations under 40 CFR parts 262, 264, 265, and 266 apply to the facility.

(ii) A description of the waste material sent to each TSDF, including the operations producing the waste material streams, the amount of waste materials sent to the TSDF during the compliance period, and the mass of organic HAP contained in these waste materials.

(iii) The methodology used to determine the total amount of waste materials sent to the TSDF during the compliance period and the mass of organic HAP contained in these waste materials. This must include the sources for all data used in the determination, methods used to generate the data, and frequency of testing or monitoring.

(iv) To the extent that waste manifests include the information specified in paragraphs (e)(4)(i) through (iii) of this section, they may be used as part of the documentation of the amount of waste materials and organic HAP content of waste materials sent to the TSDF.

(f) *Calculate the total volume of coating solids used during the*

*compliance period.* Determine  $V_{st}$ , the total volume of coating solids used, liters, which is the combined volume of coating solids for all the coatings used during the compliance period, using Equation 2 of this section.

$$V_{st} = \sum_{i=1}^m (\text{Vol}_{c,i}) (V_{s,i}) \quad (\text{Eq. 2})$$

Where:

$V_{st}$  = Total volume of coating solids used during the compliance period, liters.

$\text{Vol}_{c,i}$  = Total volume of coating,  $i$ , used during the compliance period, liters.

$V_{s,i}$  = Volume fraction of coating solids for coating,  $i$ , liters solids per liter coating, determined according to § 63.4141(b).

$m$  = Number of coatings used during the compliance period.

(g) *Calculate the organic HAP emission rate during the compliance period.* Calculate  $H_{avg}$  the organic HAP emission rate, kg organic HAP per liter coating solids used, using Equation 3 of this section:

$$H_{avg} = \frac{H_e}{V_{st}} \quad (\text{Eq. 3})$$

Where:

$H_{avg}$  = The organic HAP emission rate for the compliance period, kg organic HAP per liter coating solids.

$H_e$  = Total mass organic HAP emissions from all materials used during the compliance period, kg, as calculated by Equation 1 of this section.

$V_{st}$  = Total volume coating solids used during the compliance period, liters, as calculated by Equation 2 of this section.

(h) *Compliance demonstration.* The organic HAP emission rate for the initial compliance period,  $H_{avg}$  must be less than or equal to the applicable emission limit in § 63.4090. You must keep all records as required by §§ 63.4130 and 63.4131. As part of the Notification of Compliance Status required by § 63.4110, you must identify the coating operation(s) for which you used the emission rate without add-on controls option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in § 63.4090.

#### **§ 63.4152 How do I demonstrate continuous compliance with the emission limitations?**

(a) To demonstrate continuous compliance, the organic HAP emission rate for each compliance period, determined according to the procedures in § 63.4151(a) through (g), must be less than or equal to the applicable emission limit in § 63.4090. Each calendar month following the initial compliance period described in § 63.4150 is a compliance period.

(b) If the organic HAP emission rate for any compliance period exceeded the applicable emission limit in § 63.4090, this is a deviation from the emission limitations for that compliance period and must be reported as specified in §§ 63.4110(b)(6) and 63.4120(e).

(c) As part of each semiannual compliance report required by § 63.4120, you must submit a statement that you were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in § 63.4090.

(d) You must maintain records as specified in §§ 63.4130 and 63.4131.

#### **Compliance Requirements for the Emission Rate With Add-On Controls Option**

##### **§ 63.4160 By what date must I conduct performance tests and other initial compliance demonstrations?**

(a) *Existing sources.* For an existing affected source, you must meet the requirements of paragraphs (a)(1) through (3) of this section.

(1) Except for solvent recovery systems for which you conduct liquid-liquid material balances according to § 63.4161(h), you must conduct a performance test of each capture system and add-on control device according to the procedures in §§ 63.4164, 63.4165, and 63.4166, and establish the operating limits required by § 63.4092, no later than the compliance date specified in § 63.4083. For a solvent recovery system for which you conduct liquid-liquid material balances according to § 63.4161(h), you must initiate the first material balance no later than the compliance date specified in § 63.4083.

(2) You must develop and begin implementing the work practice plan required by § 63.4093 no later than the compliance date specified in § 63.4083.

(3) You must complete the compliance demonstration for the initial compliance period according to the requirements of § 63.4161. The initial compliance period begins on the applicable compliance date specified in § 63.4083 and ends on the last day of the

first full calendar month after the compliance date. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§ 63.4164, 63.4165, and 63.4166; results of liquid-liquid material balances conducted according to § 63.4161(h); calculations showing whether the organic HAP emission rate for the initial compliance period was equal to or less than the emission limit in § 63.4090(a); the operating limits established during the performance tests and the results of the continuous parameter monitoring required by § 63.4168; and documentation of whether you developed and implemented the work practice plan required by § 63.4093.

(b) *New and reconstructed affected sources.* For a new or reconstructed affected source, you must meet the requirements of paragraphs (b)(1) through (4) of this section.

(1) Except for solvent recovery systems for which you conduct liquid-liquid material balances according to § 63.4161(h), you must conduct a performance test of each capture system and add-on control device according to the procedures in §§ 63.4164, 63.4165, and 63.4166, and establish the operating limits required by § 63.4092, no later than 180 days after startup or 180 days after the effective date of this subpart, whichever is later. For a solvent recovery system for which you conduct liquid-liquid material balances according to § 63.4161(h), you must initiate the first material balance no later than 180 days after startup or 180 days after the effective date of this subpart, whichever is later.

(2) You must develop and begin implementing the work practice plan required by § 63.4093 no later than the compliance date specified in § 63.4083.

(3) You must complete the compliance demonstration for the initial compliance period according to the requirements of § 63.4161. The initial compliance period begins on the applicable compliance date specified in § 63.4083 and ends on the last day of the first full calendar month after the compliance date, or the date you conduct the performance tests of the emission capture systems and add-on control devices, or initiate the first liquid-liquid material balance for a solvent recovery system, whichever is later. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§ 63.4164, 63.4165, and 63.4166; results of liquid-liquid material balances conducted

according to § 63.4161(h); calculations showing whether the organic HAP emission rate for the initial compliance period was equal to or less than the emission limit in § 63.4090(b); the operating limits established during the performance tests and the results of the continuous parameter monitoring required by § 63.4168; and documentation of whether you developed and implemented the work practice plan required by § 63.4093.

(4) You do not need to comply with the operating limits for the emission capture system and add-on control device required by § 63.4092 until after you have completed the performance tests specified in paragraph (b)(1) of this section. Instead, you must maintain a log detailing the operation and maintenance of the emission capture system, add-on control device, and continuous parameter monitors during the period between the compliance date and the performance test. All continuous parameter monitoring systems must be installed and operating on the applicable compliance date specified in § 63.4083. You must begin complying with the operating limits for your affected source on the date you complete the performance tests specified in paragraph (b)(1) of this section. This requirement does not apply to solvent recovery systems for which you conduct liquid-liquid material balances.

#### § 63.4161 How do I demonstrate initial compliance?

You may use the emission rate with add-on controls option for any coating operation, for any group of coating operations in the affected source, or for all of the coating operations in the affected source. You may include both controlled and uncontrolled coating operations in a group for which you use this option. You must use either the compliant material option or the emission rate without add-on controls option for any coating operation(s) in the affected source for which you do not use this option. To demonstrate initial compliance, the coating operation(s) for which you use the emission rate with add-on controls option must meet the applicable emission limit in § 63.4090, and each controlled coating operation

must meet the operating limits and work practice standards required in §§ 63.4092 and 63.4093, respectively. You must meet all the requirements of this section to demonstrate initial compliance with the emission limitations. When calculating the organic HAP emission rate according to this section, do not include any coatings, thinners, or cleaning materials used on coating operations for which you use the compliant material option or the emission rate without add-on controls option.

(a) *Compliance with operating limits.* Except as provided in § 63.4160(b)(4), you must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by § 63.4092, using the procedures specified in §§ 63.4167 and 63.4168.

(b) *Compliance with work practice requirements.* You must develop, implement, and document your implementation of the work practice plan required by § 63.4093 during the initial compliance period as specified in § 63.4130.

(c) *Compliance with emission limits.* You must follow the procedures in paragraphs (d) through (l) of this section to demonstrate compliance with the applicable emission limit in § 63.4090.

(d) *Determine the mass fraction of organic HAP, density, volume used, and volume of coating solids.* Follow the procedures specified in § 63.4151(a) through (d) to determine the mass fraction of organic HAP, density, and volume of each coating, thinner, and cleaning material used during the compliance period; and the volume fraction of coating solids for each coating used during the compliance period.

(e) *Calculate the total mass of organic HAP emissions before add-on controls.* Using Equation 1 of § 63.4151, calculate the total mass of organic HAP emissions,  $H_c$ , before add-on controls from all coatings, thinners, and cleaning materials used during the compliance period.

(f) *Calculate the organic HAP emission reduction for each controlled coating operation.* Determine the mass of organic HAP emissions reduced for

each controlled coating operation during the compliance period. The emissions reduction determination quantifies the total organic HAP emissions that pass through the emission capture system and are destroyed or removed by the add-on control device. Use the procedures in paragraph (g) of this section to calculate the mass of organic HAP emissions reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which you conduct liquid-liquid material balances. For each controlled coating operation using a solvent recovery system for which you conduct a liquid-liquid material balance, use the procedures in paragraph (h) of this section to calculate the organic HAP emissions reduction.

(g) *Calculate the organic HAP emissions,  $H_c$ , reduction for controlled coating operations not using liquid-liquid material balance.* For each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which you conduct liquid-liquid material balances, calculate  $H_c$ , using Equation 1 of this section, by applying the emission capture system efficiency and add-on control device efficiency to the mass of organic HAP contained in the coatings, thinners, and cleaning materials that are used in the coating operation served by the emission capture system and add-on control device during the compliance period. If an operating parameter for the emission capture system or add-on control device deviates from the operating limits specified in § 63.4092, then you must assume zero efficiency for the emission capture system and add-on control device during the deviation. For the purposes of completing the compliance calculations, you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation. You must not include those materials in the calculations of organic HAP emissions reduction in Equation 1 of this section.

$$H_c = (A_1 + B_1 + C_1) \left( \frac{CE}{100} \times \frac{DRE}{100} \right) \quad (\text{Eq. 1})$$

Where:

$H_c$  = Mass of organic HAP emissions reduction for the controlled coating

operation during the compliance period, kg.  
 $A_1$  = The total mass of organic HAP in the coatings used in the controlled

coating operation, kg, as calculated in Equation 1A of this section.  
 $B_1$  = The total mass of organic HAP in the thinners used in the controlled

coating operation, kg, as calculated in Equation 1B of this section.

$C_I$  = The total mass of organic HAP in the cleaning materials used in the controlled coating operation during the compliance period, kg, as calculated in Equation 1C of this section.

CE = The capture efficiency of the emission capture system vented to the add-on control device, percent. Use the test methods and procedures specified in §§ 63.4164 and 63.4165 to measure and record capture efficiency.

DRE = Organic HAP destruction or removal efficiency of the add-on control device, percent. Use the test methods and procedures in §§ 63.4164 and 63.4166 to measure and record the organic HAP destruction or removal efficiency.

(1) Calculate  $A_I$ , the mass of organic HAP in the coatings used in the controlled coating operation, kg, using Equation 1A of this section:

$$A_I = \sum_{i=1}^m (\text{Vol}_{c,i})(D_{c,i})(W_{c,i}) \quad (\text{Eq. 1A})$$

Where:

$\text{Vol}_{c,i}$  = Total volume of coating, i, used, liters.

$D_{c,i}$  = Density of coating, i, kg per liter.

$W_{c,i}$  = Mass fraction of organic HAP in coating, i, kg per kg.

m = Number of different coatings used.

(2) Calculate  $B_I$ , the mass of organic HAP in the thinners used in the controlled coating operation, kg, using Equation 1B of this section:

$$B_I = \sum_{j=1}^n (\text{Vol}_{t,j})(D_{t,j})(W_{t,j}) \quad (\text{Eq. 1B})$$

Where:

$R_V$  = Volatile organic matter collection and recovery efficiency of the solvent recovery system during the compliance period, percent.

$M_{VR}$  = Mass of volatile organic matter recovered by the solvent recovery system during the compliance period, kg.

$\text{Vol}_i$  = Volume of coating, i, used in the coating operation controlled by the solvent recovery system during the compliance period, liters.

$\text{Vol}_{t,j}$  = Total volume of thinner, j, used, liters.

$D_{t,j}$  = Density of thinner, j, kg per liter.

$W_{t,j}$  = Mass fraction of organic HAP in thinner, j, kg per kg.

n = Number of different thinners used.

(3) Calculate  $C_I$ , the mass of organic HAP in the cleaning materials used in the controlled coating operation during the compliance period, kg, using Equation 1C of this section:

$$C_I = \sum_{k=1}^p (\text{Vol}_{s,k})(D_{s,k})(W_{s,k}) \quad (\text{Eq. 1C})$$

Where:

$\text{Vol}_{s,k}$  = Total volume of cleaning material, k, used, liters.

$D_{s,k}$  = Density of cleaning material, k, kg per liter.

$W_{s,k}$  = Mass fraction of organic HAP in cleaning material, k, kg per kg.

p = Number of different cleaning materials used.

(h) Calculate the organic HAP emissions reduction for controlled coating operations using liquid-liquid material balance,  $H_{CSR}$ . For each controlled coating operation using a solvent recovery system for which you conduct liquid-liquid material balances, calculate  $H_{CSR}$  by applying the volatile organic matter collection and recovery efficiency to the mass of organic HAP contained in the coatings, thinners, and cleaning materials that are used in the coating operation controlled by the solvent recovery system during the compliance period. Perform a liquid-liquid material balance for each compliance period as specified in paragraphs (h)(1) through (6) of this section.

(1) For each solvent recovery system, install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that indicates

the cumulative amount of volatile organic matter recovered by the solvent recovery system each compliance period. The device must be initially certified by the manufacturer to be accurate to within  $\pm 2.0$  percent.

(2) For each solvent recovery system, determine the mass,  $M_{VR}$ , of volatile organic matter recovered for the compliance period, kg, based on measurement with the device required in paragraph (h)(1) of this section.

(3) Determine the mass fraction,  $C_V$ , of volatile organic matter for each coating used in the coating operation controlled by the solvent recovery system during the compliance period, kg volatile organic matter per kg coating. You may determine the volatile organic matter mass fraction using Method 24 of 40 CFR part 60, appendix A, or an EPA approved alternative method, or you may use information provided by the manufacturer or supplier of the coating. In the event of any inconsistency between information provided by the manufacturer or supplier and the results of Method 24 of 40 CFR part 60, appendix A, or an approved alternative method, the test method results will govern.

(4) Determine the density of each coating, thinner, and cleaning material used in the coating operation controlled by the solvent recovery system during the compliance period, kg per liter, according to § 63.4151(c).

(5) Measure the volume of each coating, thinner, and cleaning material used in the coating operation controlled by the solvent recovery system during the compliance period, liters.

(6) Calculate the solvent recovery system's volatile organic matter collection and recovery efficiency,  $R_V$ , using Equation 2 of this section:

$$R_V = 100 \frac{M_{VR}}{\sum_{i=1}^m \text{Vol}_i D_i C_{vi} + \sum_{j=1}^n \text{Vol}_j D_j + \sum_{k=1}^p \text{Vol}_k D_k} \quad (\text{Eq. 2})$$

Where:

$R_V$  = Volatile organic matter collection and recovery efficiency of the solvent recovery system during the compliance period, percent.

$M_{VR}$  = Mass of volatile organic matter recovered by the solvent recovery system during the compliance period, kg.

$\text{Vol}_i$  = Volume of coating, i, used in the coating operation controlled by the solvent recovery system during the compliance period, liters.

$D_i$  = Density of coating, i, kg per liter.

$C_{vi}$  = Mass fraction of volatile organic matter for coating, i, kg volatile organic matter per kg coating.

$\text{Vol}_j$  = Volume of thinner, j, used in the coating operation controlled by the solvent recovery system during the compliance period, liters.

$D_j$  = Density of thinner, j, kg per liter.

$\text{Vol}_k$  = Volume of cleaning material, k, used in the coating operation controlled by the solvent recovery

system during the compliance period, liters.

$D_k$  = Density of cleaning material, k, kg per liter.

m = Number of different coatings used in the coating operation controlled by the solvent recovery system during the compliance period.

n = Number of different thinners used in the coating operation controlled by the solvent recovery system during the compliance period.

$p$  = Number of different cleaning materials used in the coating operation controlled by the solvent recovery system during the compliance period.

(7) Calculate the mass of organic HAP emissions reduction for the coating operation controlled by the solvent recovery system during the compliance period,  $H_{CSR}$ , using Equation 3 of this section:

$$H_{CSR} = (A_I + B_I + C_I) \left( \frac{R_v}{100} \right) \quad (\text{Eq. 3})$$

Where:

$H_{CSR}$  = Mass of organic HAP emissions reduction for the coating operation controlled by the solvent recovery

system during the compliance period, kg.

$A_I$  = The total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 1A of this section.

$B_I$  = The total mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 1B of this section.

$C_I$  = The total mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 1C of this section.

$R_v$  = Volatile organic matter collection and recovery efficiency of the

solvent recovery system, percent, from Equation 2 of this section.

(i) [Reserved]

(j) Calculate the total volume of coating solids used. Determine  $V_{st}$ , the total volume of coating solids used, liters, which is the combined volume of coating solids for all the coatings used during the compliance period, using Equation 2 of § 63.4151.

(k) Calculate the organic HAP emission rate. Determine  $H_{HAP}$ , the organic HAP emission rate to the atmosphere, kg organic HAP per liter coating solids used during the compliance period, using either Equation 4 of this section or Equation 1 of § 63.4162.

$$H_{HAP} = \frac{H_e - \sum_{i=1}^q (H_{C,i}) - \sum_{j=1}^r (H_{CSR,j})}{V_{st}} \quad (\text{Eq. 4})$$

Where:

$H_e$  = Total mass of organic HAP emissions before add-on controls from all the coatings, thinners, and cleaning materials used during the compliance period, kg, determined according to paragraph (e) of this section.

$H_{C,i}$  = Total mass of organic HAP emissions reduction for controlled coating operation,  $i$ , during the compliance period, kg, from Equation 1 of this section.

$H_{CSR,j}$  = Total mass of organic HAP emissions reduction for controlled coating operation,  $j$ , during the compliance period, kg, from Equation 3 of this section.

$V_{st}$  = Total volume of coating solids used during the compliance period, liters, from Equation 2 of § 63.4151.

$q$  = Number of controlled coating operations except those controlled with a solvent recovery system.

$r$  = Number of coating operations controlled with a solvent recovery system.

(l) *Compliance demonstration.* To demonstrate initial compliance with the emission limit,  $H_{HAP}$ , calculated using either Equation 4 of this section or Equation 1 of § 63.4162, must be less than or equal to the applicable emission limit in § 63.4090. You must keep all records as required by §§ 63.4130 and 63.4131. As part of the Notification of Compliance Status required by § 63.4110, you must identify the coating operation(s) for which you used the emission rate with ad-on controls option

and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in § 63.4090, and you achieved the operating limits required by § 63.4092 and the work practice standards required by § 63.4093.

**§ 63.4162 How do I determine the organic HAP emission rate for a controlled coating operation not using a material balance if I operate it under different sets of representative operating conditions?**

(a) If a controlled coating operation for which you do not conduct liquid-liquid material balances, its emission capture system, or its add-on control device will be operated at multiple sets of representative operating conditions that result in different capture system or add-on control device efficiencies during the compliance period, you must determine the organic HAP emission rate according to either paragraph (b) or (c) of this section. The cases described in paragraphs (a)(1) and (2) of this section are examples of such operating conditions.

(1) You use a single add-on control device to reduce emissions from two or more coating operations, and the number of coating operations vented to the add-on control device is variable during the compliance period. This case also includes situations where you have more than one capture device on the same coating operation, and the number of capture devices or one of the capture

devices vented to the control device is changed during the compliance period.

(2) The coatings or cleaning materials you apply, or the products to which you apply them, differ during the compliance period, and the differences are such that the emission capture efficiency or add-on control device efficiency changes. This case includes a change in the shape or size of the product coated such that there is a change in capture efficiency of the capture system. This case also includes a change in the materials that results in an inlet concentration to the add-on control device that is sufficiently lower such that the percent reduction the control device can achieve changes, or a change in the volatility of the organic HAP in the materials used such that a lower proportion of the HAP is captured by the capture system, and a higher amount is not captured by the capture system.

(b) If you conduct your performance test under the representative operating conditions that are expected to result in the lowest emission capture system and add-on control device efficiencies, as allowed under § 63.4164(b)(2), then determine the organic HAP emission rate according to the procedures and equations in § 63.4161. You do not need to follow paragraph (c) of this section.

(c) If you conduct your performance test under multiple sets of representative operating conditions to establish different emission capture system and add-on control device efficiencies for each set of operating conditions, as allowed under

§ 63.4164(b)(1), then determine the organic HAP emission rate according to paragraphs (c)(1) and (2) of this section.

(1) You must use Equation 1 of this section for determining  $H_{HAP}$ , the organic HAP emission rate to the

atmosphere, kg organic HAP per liter coating solids used.

$$H_{HAP} = \frac{H_e - \sum_{i=1}^q (H_{C,i1} + H_{C,i2} + \dots + H_{C,in}) - \sum_{j=1}^r (H_{CSR,j})}{V_{st}} \quad (\text{Eq. 1})$$

Where:

$H_e$  = Total mass of organic HAP emissions before add-on controls from all coatings, thinners, and cleaning materials used during the compliance period, kg, determined according to § 63.4161(e).

$H_{C,i1}$ ,  $H_{C,i2}$ ,  $H_{C,in}$  = Total mass of organic HAP emissions reduction, kg, for controlled coating operation,  $i$ , while operating under each operating condition,  $n$ , during the compliance period, from Equation 1 of § 63.4161.

$H_{CSR,j}$  = Total mass of organic HAP emissions reduction, kg, from coating operation,  $j$ , controlled by a solvent recovery system, from Equation 3 of § 63.4161.

$V_{st}$  = Total volume of coating solids used during the compliance period, liters, from Equation 2 of § 63.4151.

$n$  = Number of different operating conditions that affect emission capture system efficiency or add-on control device organic HAP destruction or removal efficiency under which the coating operation operated during the compliance period.

$q$  = Number of controlled coating operations not controlled by a solvent recovery system.

$r$  = Number of different coating operations controlled by a solvent recovery system.

(2) To determine the  $H_{Cn}$  in Equation 1 of this section, follow the steps in paragraphs (c)(2)(i) through (iii) of this section.

(i) Use Equation 1 of § 63.4161 to calculate the  $H_{Cn}$  for each operating condition of each controlled coating operation.

(ii) For the factors  $A_i$ ,  $B_i$ , and  $C_i$  in Equation 1 of § 63.4161, use the mass of organic HAP contained in the coatings, thinners, and cleaning materials used in each controlled coating operation while operating under each operating condition,  $n$ .

(iii) In Equation 1 of § 63.4161, use the emission capture system efficiency and add-on control device organic HAP destruction or removal efficiency that apply under each operating condition,  $n$ . These efficiencies for each operating

condition are determined from the performance test required by § 63.4160.

#### § 63.4163 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance with the applicable emission limit in § 63.4090, the organic HAP emission rate for each compliance period, determined according to the procedures in § 63.4161 (and in § 63.4162, if applicable), must be equal to or less than the applicable emission limit in § 63.4090. Each calendar month following the initial compliance period described in § 63.4160 is a compliance period.

(b) If the organic HAP emission rate for any compliance period exceeded the applicable emission limit in § 63.4090, this is a deviation from the emission limitation for that compliance period and must be reported as specified in §§ 63.4110(b)(6) and 63.4120(g).

(c) You must demonstrate continuous compliance with each operating limit required by § 63.4092 that applies to you, as specified in Table 1 of this subpart.

(1) If an operating parameter is out of the allowed range specified in Table 1 of this subpart, this is a deviation from the operating limit that must be reported as specified in §§ 63.4110(b)(6) and 63.4120(g).

(2) If an operating parameter deviates from the operating limit specified in Table 1 of this subpart, then you must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation. For the purposes of completing the compliance calculations specified in §§ 63.4161 and 63.4162, you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation. You must not include those materials in the calculation of organic HAP emissions reduction in Equation 1 of § 63.4161.

(d) You must meet the requirements for bypass lines in § 63.4168(b). If any bypass line is opened and emissions are diverted to the atmosphere when the coating operation is running, this is a deviation that must be reported as

specified in §§ 63.4110(b)(6) and 63.4120(g). For the purposes of completing the compliance calculations specified in §§ 63.4161 and 63.4162, you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation. You must not include those materials in the calculation of organic HAP emissions reduction in Equation 1 of § 63.4161.

(e) You must demonstrate continuous compliance with the work practice standards in § 63.4093. If you did not develop a work practice plan, or you did not implement the plan, or you did not keep the records required by § 63.4130(k)(9), this is a deviation from the work practice standards that must be reported as specified in §§ 63.4110(b)(6) and 63.4120(g).

(f) As part of each semiannual compliance report required in § 63.4120, you must submit a statement that you were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in § 63.4090, and you achieved the operating limits required by § 63.4092 and the work practice standards required by § 63.4093 during each compliance period.

(g) During periods of startup, shutdown, and malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency, you must operate in accordance with the startup, shutdown, and malfunction plan required by § 63.4100(d).

(h) Consistent with §§ 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the startup, shutdown, and malfunction plan. The Administrator will determine whether deviations that occur during a period of

startup, shutdown, or malfunction are violations according to the provisions in § 63.6(e).

(i) [Reserved]

(j) You must maintain records as specified in §§ 63.4130 and 63.4131.

**§ 63.4164 What are the general requirements for performance tests?**

(a) You must conduct each performance test according to the requirements in § 63.7(e)(1) and under the conditions in paragraphs (a)(1) and (2) of this section, except as provided in paragraph (b) of this section:

(1) *Representative coating operation operating conditions.* You must conduct the performance test under representative operating conditions for the coating operation. Operations during periods of startup, shutdown, or malfunction and periods of nonoperation do not constitute representative conditions. You must record the process information that is necessary to document operating conditions during the test and explain why the conditions are representative of normal operation.

(2) *Representative emission capture system and add-on control device operating conditions.* You must conduct the performance test when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration. You must record information that is necessary to document emission capture system and add-on control device operating conditions during the test and explain why the conditions are representative of normal operation.

(b) If the coating operation, emission capture system, or add-on control device will be operated at different sets of representative operating conditions, you must conduct the performance test according to either paragraph (b)(1) or (2) of this section:

(1) Test at each of the representative operating conditions and establish emission capture system and add-on control device efficiencies and operating limits for each operating condition. To demonstrate continuous compliance following the performance test, record the conditions under which the process, emission capture system, and add-on control device are operating during each

time period of operation, and calculate the organic HAP emission rate as described in § 63.4162.

(2) Test at the representative operating conditions that are expected to result in the lowest emission capture system and add-on control device efficiencies and establish efficiencies and operating limits based on this test. Use these efficiencies in the emission calculations in § 63.4161.

(c) You must conduct each performance test of an emission capture system according to the requirements in § 63.4165 and of an add-on control device according to the requirements in § 63.4166.

(d) The performance test to determine add-on control device organic HAP destruction or removal efficiency must consist of three runs as specified in § 63.7(e)(3) and each run must last at least 1 hour.

**§ 63.4165 How do I determine the emission capture system efficiency?**

You must use the procedures and test methods in this section to determine capture efficiency as part of the performance test required by § 63.4160.

(a) *Assuming 100 percent capture efficiency.* You may assume the capture system efficiency is 100 percent if both of the conditions in paragraphs (a)(1) and (2) of this section are met:

(1) The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and directs all the exhaust gases from the enclosure to an add-on control device.

(2) All coatings, thinners, and cleaning materials used in the coating operation are applied within the capture system; coating solvent flash-off and coating, curing, and drying occurs within the capture system; and the removal of or evaporation of cleaning materials from the surfaces they are applied to occurs within the capture system. For example, this criterion is not met if parts enter the open shop environment when being moved between a spray booth and a curing oven.

(b) *Measuring capture efficiency.* If the capture system does not meet both of the criteria in paragraphs (a)(1) and (2) of this section, then you must use one of the three protocols described in paragraphs (c), (d), and (e) of this section to measure capture efficiency.

The capture efficiency measurements use TVH capture efficiency as a surrogate for organic HAP capture efficiency. For the protocols in paragraphs (c) and (d) of this section, the capture efficiency measurement must consist of three test runs and each run must last at least 3 hours and through a complete production run as long as the production run does not exceed 8 hours.

(c) *Liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure.* The liquid-to-uncaptured-gas protocol compares the mass of liquid TVH in materials used in the coating operation, referred to as TVH<sub>used</sub>, to the mass of TVH emissions not captured by the emission capture system, referred to as TVH<sub>uncaptured</sub>. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (c)(1) through (6) of this section to measure emission capture system efficiency using the liquid-to-uncaptured-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the coating operation where coatings, thinners, and cleaning materials are applied, and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204A or 204F of appendix M to 40 CFR part 51 to determine the mass fraction, kg TVH per kg material, of TVH liquid input from each coating, thinner, and cleaning material used in the coating operation during each capture efficiency test run. To make the determination, substitute TVH for each occurrence of the term VOC in the methods.

(3) Use Equation 1 of this section to calculate TVH<sub>used</sub>, the total mass of TVH liquid input from all the coatings, thinners, and cleaning materials used in the coating operation during each capture efficiency test run.

$$\text{TVH}_{\text{used}} = \sum_{i=1}^n (\text{TVH}_i)(\text{Vol}_i)(D_i) \quad (\text{Eq. 1})$$

Where:

$TVH_i$  = Mass fraction of TVH in coating, thinner, or cleaning material,  $i$ , that is used in the coating operation during the capture efficiency test run, kg TVH per kg material.

$Vol_i$  = Total volume of coating, thinner, or cleaning material,  $i$ , used in the coating operation during the capture efficiency test run, liters.

$D_i$  = Density of coating, thinner, or cleaning material,  $i$ , kg material per liter material.

$n$  = number of different coatings, thinners, and cleaning materials

used in the coating operation during the capture efficiency test run.

(4) Use Method 204D or E of appendix M to 40 CFR part 51 to measure  $TVH_{\text{uncaptured}}$ , the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(5) For each capture efficiency test run, determine the percent capture efficiency, CE, of the emission capture system using Equation 2 of this section:

$$CE = \frac{(TVH_{\text{used}} - TVH_{\text{uncaptured}})}{TVH_{\text{used}}} \times 100 \quad (\text{Eq. 2})$$

Where:

$TVH_{\text{used}}$  = The total mass of TVH liquid input used in the coating operation during the capture efficiency test run, kg.

$TVH_{\text{uncaptured}}$  = The total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.

(6) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(d) *Gas-to-gas protocol using a temporary total enclosure or a building enclosure.* The gas-to-gas protocol compares the mass of TVH emissions captured by the emission capture system, referred to as  $TVH_{\text{captured}}$ , to the mass of TVH emissions not captured, referred to as  $TVH_{\text{uncaptured}}$ . Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (d)(1) through (5) of this section to measure emission capture system efficiency using the gas-to-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the coating operation where coatings, thinners, and cleaning materials are

applied, and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions generated by the coating operation for routing to an add-on control device, such as the entrance and exit areas of an oven or a spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204B or 204C of appendix M to 40 CFR part 51 to measure  $TVH_{\text{captured}}$ , the total mass, kg, of TVH emissions captured by the emission capture system during each capture efficiency test run as measured at the inlet to the add-on control device. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) The sampling points for the Method 204B or 204C measurement must be upstream from the add-on control device and must represent total emissions routed from the capture system and entering the add-on control device.

(ii) If multiple emission streams from the capture system enter the add-on

control device without a single common duct, then the emissions entering the add-on control device must be simultaneously measured in each duct and the total emissions entering the add-on control device must be determined.

(3) Use Method 204D or 204E of appendix M to 40 CFR part 51 to measure  $TVH_{\text{uncaptured}}$ , the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(4) For each capture efficiency test run, determine the percent capture efficiency, CE, of the emission capture system using Equation 3 of this section:

$$CE = \frac{TVH_{\text{captured}}}{(TVH_{\text{captured}} + TVH_{\text{uncaptured}})} \times 100 \quad (\text{Eq. 3})$$

Where:

$TVH_{\text{captured}}$  = The total mass of TVH captured by the emission capture system as measured at the inlet to the add-on control device during

the emission capture efficiency test run, kg.

$TVH_{\text{uncaptured}}$  = The total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or

building enclosure during the capture efficiency test run, kg.

(5) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.



(e) *Alternative capture efficiency protocol.* As an alternative to the procedures specified in paragraphs (c) and (d) of this section, you may determine capture efficiency using any other capture efficiency protocol and test methods that satisfy the criteria of either the DQO or LCL approach as described in appendix A to subpart KK of this part.

**§ 63.4166 How do I determine the add-on control device emission destruction or removal efficiency?**

(a) For all types of add-on control devices, use the test methods as specified in paragraphs (a)(1) through (5) of this section.

(1) Use Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select sampling sites and velocity traverse points.

(2) Use Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.

(3) Use Method 3, 3A, or 3B of appendix A to 40 CFR part 60, as appropriate, for gas analysis to determine dry molecular weight.

(4) Use Method 4 of appendix A to 40 CFR part 60, to determine stack gas moisture.

(5) Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.

(b) Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously, using Method 25 or 25A of appendix A to 40 CFR part 60. Use Method 25A instead of Method 25 if you expect the total gaseous organic concentration as carbon to be 50 parts per million (ppm) or less at the control device outlet. Use the same method for both the inlet and outlet measurements.

(c) If two or more add-on control devices are used for the same emission stream, then you must measure emissions at the outlet of each device. For example, if one add-on control device is a concentrator with an outlet for the high-volume, dilute stream that has been treated by the concentrator, and a second add-on control device is an oxidizer with an outlet for the low-volume, concentrated stream that is treated with the oxidizer, you must measure emissions at both outlets.

(d) For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device, using Equation 1 of this section:

$$M_f = Q_{sd} C_c [12][0.0416][10^{-6}] \quad (\text{Eq. 1})$$

Where:

$M_f$  = The total gaseous organic emissions mass flow rate, kg/per hour (h).

$C_c$  = The concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, parts per million by volume (ppmv), dry basis.

$Q_{sd}$  = The volumetric flow rate of gases entering or exiting the control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters/hour (dscm/h).

0.0416 = Conversion factor for molar volume, kg-mol per cubic meter ( $m^3$ ) (@ 293 Kelvin (K) and 760 millimeters of mercury (mmHg)).

(e) For each test run, determine the add-on control device organic emissions destruction or removal efficiency, DRE, using Equation 2 of this section.

$$\text{DRE} = \frac{M_{fi} - M_{fo}}{M_{fi}} \quad (\text{Eq. 2})$$

Where:

$M_{fi}$  = The total gaseous organic emissions mass flow rate at the inlet to the control device, using Equation 1 of this section, kg/h.

$M_{fo}$  = The total gaseous organic emissions mass flow rate at the outlet of the control device, using Equation 1 of this section, kg/h.

(f) Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 2 of this section.

**§ 63.4167 How do I establish the emission capture system and add-on control device operating limits during the performance test?**

During the performance test required by § 63.4160 and described in §§ 63.4164, 63.4165, and 63.4166, you must establish the operating limits required by § 63.4092 according to this section, unless you have received approval for alternative monitoring and operating limits under § 63.8(f) as specified in § 63.4092.

(a) *Thermal oxidizers.* If your control device is a thermal oxidizer, establish the operating limits according to paragraphs (a)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs. You must monitor the temperature in the firebox of the thermal oxidizer or immediately

downstream of the firebox before any substantial heat exchange occurs.

(2) Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum operating limit for your thermal oxidizer, unless you are determining operating limits for multiple operating conditions as specified in § 63.4164(b)(1) and paragraph (f) of this section.

(b) *Catalytic oxidizers.* If your control device is a catalytic oxidizer, establish the operating limits according to paragraphs (b)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. These are the minimum operating limits for your catalytic oxidizer, unless you are determining operating limits for multiple operating conditions as specified in § 63.4164(b)(1) and paragraph (f) of this section.

(c) *Carbon adsorbers.* If your control device is a carbon adsorber, establish the operating limits according to paragraphs (c)(1) and (2) of this section.

(1) You must monitor and record the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, and the carbon bed temperature after each carbon bed regeneration and cooling cycle, for the regeneration cycle either immediately preceding or immediately following the performance test.

(2) The operating limits for your carbon adsorber are the minimum total desorbing gas mass flow recorded during the regeneration cycle, and the maximum carbon bed temperature recorded after the cooling cycle, unless you are determining operating limits for multiple operating conditions as specified in § 63.4164(b)(1) and paragraph (f) of this section.

(d) *Condensers.* If your control device is a condenser, establish the operating limits according to paragraphs (d)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the condenser outlet (product side) gas temperature at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average condenser outlet (product side) gas temperature maintained during the performance test. This average condenser outlet gas temperature is the maximum operating limit for your condenser, unless you are determining operating limits for multiple operating conditions as specified in § 63.4164(b)(1) and paragraph (f) of this section.

(e) *Emission capture system.* For each capture device that is not part of a PTE that meets the criteria of § 63.4165(a), establish an operating limit for either the gas volumetric flow rate or duct static pressure, as specified in paragraphs (e)(1) and (2) of this section. The operating limit for a PTE is specified in Table 1 of this subpart.

(1) During the capture efficiency determination required by § 63.4160 and described in §§ 63.4164 and 63.4165, you must monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in your emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet.

(2) Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device. This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device, unless you are determining operating limits for multiple operating conditions as specified in § 63.4164(b)(1) and paragraph (f) of this section.

(f) *Multiple operating conditions.* If you are determining operating limits for multiple operating conditions for the emission capture system or add-on control device as specified in § 63.4164(b)(1), you must conduct a performance test under each operating condition and establish the operating limits for the parameters under each operating condition according to paragraphs (f)(1) and (2) of this section.

(1) You must monitor and record the value of the parameter that corresponds to the applicable operating limit during the performance test under each operating condition.

(2) The average parameter value recorded during the performance test under each condition is the operating limit for that parameter when the coating operation is operating under that condition.

**§ 63.4168 What are the requirements for continuous monitoring system (CMS) installation, operation, and maintenance?**

(a) *General.* You must install, operate, and maintain each continuous parameter monitoring system specified in paragraphs (b) through (f) of this section according to paragraphs (a)(1) through (6) of this section.

(1) The continuous parameter monitoring system must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of continuous parameter monitoring system operation in 1 hour.

(2) You must determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation.

(3) You must record the results of each inspection, calibration, and validation check of the continuous parameter monitoring system.

(4) You must maintain the continuous parameter monitoring system at all times and have available necessary parts for routine repairs of the monitoring equipment.

(5) You must operate the continuous parameter monitoring system and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).

(6) You must not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. You must use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits.

(7) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the continuous parameter monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for required calculations is a deviation from the monitoring requirements.

(b) *Capture system bypass line.* You must meet the requirements of

paragraphs (b)(1) and (2) of this section for each emission capture system that contains bypass lines that could divert emissions away from the control device to the atmosphere.

(1) You must monitor or secure the valve or closure mechanism controlling the bypass line in a nondiverting position in such a way that the valve or closure mechanism cannot be opened without creating a record that the valve was opened. The method used to monitor or secure the valve or closure mechanism must meet one of the requirements specified in paragraphs (b)(2)(i) through (iv) of this section.

(i) *Flow control position indicator.* Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that provides a record indicating whether the emissions are directed to the control device or diverted from the add-on control device. The time of occurrence and flow control position must be recorded, as well as every time the flow direction is changed. The flow control position indicator must be installed at the entrance to any bypass line that could divert the emissions away from the add-on control device to the atmosphere.

(ii) *Car-seal or lock-and-key valve closures.* Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. You must visually inspect the seal or closure mechanism at least once every month to ensure that the valve is maintained in the closed position, and the emissions are not diverted away from the add-on control device to the atmosphere.

(iii) *Valve closure continuous monitoring.* Ensure that any bypass line valve is in the closed (non-diverting) position through continuous monitoring of valve position. You must inspect the monitoring system at least once every month to verify that the monitor will indicate valve position.

(iv) *Automatic shutdown system.* Use an automatic shutdown system in which the coating operation is stopped when flow is diverted by the bypass line away from the add-on control device to the atmosphere when the coating operation is running. You must inspect the automatic shutdown system at least once every month to verify that it will detect diversions of flow and shutdown the coating operation.

(2) If any bypass line is opened, you must include a description of why the bypass line was opened and the length of time it remained open in the semiannual compliance reports required in § 63.4120.

(c) *Thermal oxidizers and catalytic oxidizers.* If you are using a thermal

oxidizer or catalytic oxidizer as an add-on control device, you must comply with the requirements in paragraphs (c)(1) through (3) of this section:

(1) For a thermal oxidizer, install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs.

(2) For a catalytic oxidizer, install gas temperature monitors both upstream and downstream of the catalyst bed. The temperature monitors must be in the gas stream immediately before and after the catalyst bed to measure the temperature difference across the bed.

(3) For all thermal oxidizers and catalytic oxidizers, you must meet the requirements in paragraphs (a) and (c)(3)(i) through (vii) of this section for each gas temperature monitoring device.

(i) Locate the temperature sensor in a position that provides a representative temperature.

(ii) Use a temperature sensor with a measurement sensitivity of 4 degrees Fahrenheit or 0.75 percent of the temperature value, whichever is larger.

(iii) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(iv) If a gas temperature chart recorder is used, it must have a measurement sensitivity in the minor division of at least 20 degrees Fahrenheit.

(v) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, you must conduct a temperature sensor validation check in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 30 degrees Fahrenheit of the process temperature sensor's reading.

(vi) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor.

(vii) At least monthly, inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.

(d) *Carbon adsorbers.* If you are using a carbon adsorber as an add-on control device, you must monitor the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, the carbon bed temperature after each regeneration and cooling cycle, and comply with paragraphs (a) and (d)(1) and (2) of this section.

(1) The regeneration desorbing gas mass flow monitor must be an integrating device having a measurement sensitivity of plus or minus 10 percent, capable of recording the total regeneration desorbing gas mass flow for each regeneration cycle.

(2) The carbon bed temperature monitor must have a measurement sensitivity of 1 percent of the temperature recorded or 1 degree Fahrenheit, whichever is greater, and must be capable of recording the temperature within 15 minutes of completing any carbon bed cooling cycle.

(e) *Condensers.* If you are using a condenser, you must monitor the condenser outlet (product side) gas temperature and comply with paragraphs (a) and (e)(1) and (2) of this section.

(1) The gas temperature monitor must have a measurement sensitivity of 1 percent of the temperature recorded or 1 degree Fahrenheit, whichever is greater.

(2) The temperature monitor must provide a gas temperature record at least once every 15 minutes.

(f) *Emission capture system monitoring.* The capture system monitoring system must comply with the applicable requirements in paragraphs (f)(1) and (2) of this section.

(1) For each flow measurement device, you must meet the requirements in paragraphs (a) and (f)(1)(i) through (v) of this section.

(i) Locate a flow sensor in a position that provides a representative flow measurement in the duct from each capture device in the emission capture system to the add-on control device.

(ii) Use a flow sensor with a measurement sensitivity of 2 percent of the flow rate.

(iii) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(iv) Conduct a flow sensor calibration check at least semiannually.

(v) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(2) For each pressure drop measurement device, you must comply with the requirements in paragraphs (a) and (f)(2)(i) through (vii) of this section.

(i) Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure drop across each opening you are monitoring.

(ii) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(iii) Use a gauge with a measurement sensitivity of 0.5 inch of water or a transducer with a measurement sensitivity of 1 percent of the pressure range.

(iv) Check pressure tap pluggage daily.

(v) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(vi) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.

(vii) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

### Other Requirements and Information

#### § 63.4180 Who implements and enforces this subpart?

(a) This subpart can be administered by us, the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency (as well as the U.S. EPA), then that agency has the authority to administer and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are as follows:

(1) Approval of alternatives to the work practice standards in § 63.4093 under § 63.6(g).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

#### § 63.4181 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in 40 CFR 63.2, the General Provisions of this part, and in this section as follows:

*Add-on control* means an air pollution control device, such as a thermal oxidizer or carbon adsorber, that

reduces pollution in an air stream by destruction or removal before discharge to the atmosphere.

*Capture device* means a hood, enclosure, room, floor sweep, or other means of containing or collecting emissions and directing those emissions into an add-on air pollution control device.

*Capture efficiency* means the portion (expressed as a percentage) of the pollutants from an emission source that is delivered to an add-on control device.

*Capture system* means one or more capture devices intended to collect emissions generated by a coating operation in the use of coatings and cleaning materials, both at the point of application and at subsequent points where emissions from the coatings and cleaning materials occur, such as flashoff, drying, or curing. As used in this subpart, multiple capture devices that collect emissions generated by a coating operation are considered a single capture system.

*Cleaning material* means a solvent used to remove contaminants and other materials, such as dirt, grease, oil, and dried or wet coating, from a substrate before or after coating application or from equipment associated with a coating operation, such as spray booths, spray guns, racks, tanks, and hangers. Thus, it includes cleaning materials used for both substrates and equipment.

*Coating* means a material applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, sealants, caulks, inks, adhesives, and maskants. Decorative, protective, or functional materials that consist only of protective oils, acids, bases, or any combination of these substances are not considered coatings for the purposes of this subpart.

*Coating operation* means any equipment used to prepare a substrate for coating application (surface preparation) or to clean it after coating application; to apply coating to a substrate (coating application); or to clean coating operation equipment and storage, mixing, and conveying equipment (equipment cleaning). A single coating operation may include any combination of these types of equipment, but always includes at least the point at which a coating or cleaning material is applied and all subsequent points where organic HAP emissions from that coating or cleaning material occur. There may be multiple coating operations in an affected source.

*Coating solids* means the nonvolatile portion of the coating that makes up the dry film.

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

*Controlled coating operation* means a coating operation from which some or all of the organic HAP emissions are routed through an emission capture system and add-on control device.

*Deviation* means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limit, or operating limit, or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limit, or operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

*Emission limitation* means an emission limit, operating limit, or work practice standard.

*Enclosure* means a structure that surrounds a source of emissions and captures and directs the emissions to an add-on control device.

*Exempt compound* means a specific compound that is not considered a VOC due to negligible photochemical reactivity. The exempt compounds are listed in 40 CFR 51.100(s).

*Manufacturer's formulation data* means data on a material (such as a coating) that are supplied by the material manufacturer based on knowledge of the ingredients used to manufacture that material, rather than based on testing of the material. Manufacturer's formulation data may include, but are not limited to, information on density, organic HAP content, and coating solids content.

*Mass fraction of organic HAP* means the ratio of the mass of organic HAP to the mass of a material in which it is contained; kg of organic HAP per kg of material.

*Organic HAP content* means the mass of organic HAP per volume of coating solids for a coating, calculated using Equation 2 of § 63.4141. The organic HAP content is determined for the coating in the condition it is in when

received from its manufacturer or supplier and does not account for any alteration after receipt.

*Permanent total enclosure (PTE)* means a permanently installed enclosure that meets the criteria of Method 204 of appendix M, 40 CFR part 51, for a PTE and that directs all the exhaust gases from the enclosure to an add-on control device.

*Protective oil* means an organic material that is applied to a substrate for the purpose of providing lubrication or protection from corrosion without forming a solid film. This definition of protective oils includes, but is not limited to, lubricating oils, evaporative oils (including those that evaporate completely), and extrusion oils.

*Research or laboratory facility* means a facility whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not engaged in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

*Responsible official* means responsible official as defined in 40 CFR 70.2.

*Startup, initial* means the first time equipment is brought online in a facility.

*Surface preparation* means cleaning of part or all of a substrate to prepare it for coating application.

*Temporary total enclosure* means an enclosure constructed for the purpose of measuring the capture efficiency of pollutants emitted from a given source as defined in Method 204 of appendix M, 40 CFR part 51.

*Thinner* means an organic solvent that is added to a coating after the coating is received from the supplier.

*Total volatile hydrocarbon (TVH)* means the total amount of nonaqueous volatile organic material determined according to Methods 204A through 204C of appendix M to 40 CFR part 51 and substituting the term TVH each place in the methods where the term VOC is used. The TVH includes both VOC and non-VOC.

*Uncontrolled coating operation* means a coating operation from which none of the organic HAP emissions are routed through an emission capture system and add-on control device.

*Volatile organic compound (VOC)* means any compound defined as VOC in 40 CFR 51.100(s).

*Volume fraction of coating solids* means the ratio of the volume of coating solids (also known as volume of nonvolatiles) to the volume of coating;

liters of coating solids per liter of coating.

Wastewater means water that is generated in a coating operation and is

collected, stored, or treated prior to being discarded or discharged.

Tables

TABLE 1 TO SUBPART NNNN. OPERATING LIMITS IF USING THE EMISSION RATE WITH ADD-ON CONTROLS OPTION

For the following device . . .	You must meet the following operating limit . . .	And you must demonstrate continuous compliance with the operating limit by . . .
(1) Thermal oxidizer .....	The average combustion temperature in any 3-hour period must not fall below the combustion temperature limit established according to § 63.4167(a).	(i) Collecting the combustion temperature data according to § 63.4168(c); and (ii) Reducing the data to 3-hour block averages; and (iii) Maintaining the 3-hour average combustion temperature at or above the temperature limit.
(2) Catalytic oxidizer .....	(a) The average temperature measured just before the catalyst bed in any 3-hour period must not fall below the limit established according to § 63.4167(b).  (b) The average temperature difference across the catalyst bed in any 3-hour period must not fall below the temperature difference limit established according to § 63.4167(b).	(i) Collecting the temperature data according to § 63.4168(c); and (ii) Reducing the data to 3-hour block averages; and (iii) Maintaining the 3-hour average temperature before the catalyst bed at or above the temperature limit.  (i) Collecting the temperature data according to § 63.4168(c); and (ii) Reducing the data to 3-hour block averages; and (iii) Maintaining the 3-hour average temperature difference at or above the temperature difference limit.
(3) Carbon adsorber .....	(a) The total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each carbon bed regeneration cycle must not fall below the total regeneration desorbing gas mass flow limit established according to § 63.4167(c).  (b) The temperature of the carbon bed, after completing each regeneration and any cooling cycle, must not exceed the carbon bed temperature limit established according to § 63.4167(c).	(i) Measuring the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle according to § 63.4168(d); and (ii) Maintaining the total regeneration desorbing gas mass flow at or above the mass flow limit.  (i) Measuring the temperature of the carbon bed, after completing each regeneration and any cooling cycle, according to § 63.4168(d); and (ii) Maintaining the carbon bed temperature recorded after completing each regeneration and any cooling cycle at or below the temperature limit.
(4) Condenser .....	The average condenser outlet (product side) gas temperature in any 3-hour period must not exceed the temperature limit established according to § 63.4167(d).	(i) Collecting the condenser outlet (product side) gas temperature according to § 63.4168(e); and (ii) Reducing the data to 3-hour block averages; and (iii) Maintaining the 3-hour average gas temperature at the outlet at or below the temperature limit.
(5) Emission capture system that is a PTE according to § 63.4165(a).	The direction of the air flow at all times must be into the enclosure; and in any 3-hour period, either the average facial velocity of air through all natural draft openings in the enclosure must be at least 3,600 meters per minute (200 feet per minute), OR the pressure drop across the enclosure must be at least 0.013 mmHg (0.007 inch H <sub>2</sub> O), as established in Method 204 of appendix M to 40 CFR part 51.	(i) Collecting the direction of air flow, and either the facial velocity of air through all natural draft openings according to § 63.4168(f)(1) or the pressure drop across the enclosure according to § 63.4168(f)(2); and (ii) Reducing the data for facial velocity or pressure drop to 3-hour block averages; and (iii) Maintaining the 3-hour average facial velocity of air flow through all natural draft openings or the pressure drop at or above the facial velocity limit or pressure drop limit, and maintaining the direction of air flow into the enclosure at all times.
(6) Emission capture system that is not a PTE according to § 63.4165(a).	The average gas volumetric flow rate or duct static pressure in each duct between a capture device and add-on control device inlet in any 3-hour period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to § 63.4167(e).	(i) Collecting the gas volumetric flow rate or duct static pressure for each capture device according to § 63.4168(f); and (ii) Reducing the data to 3-hour block averages; and (iii) Maintaining the 3-hour average gas volumetric flow rate or duct static pressure for each capture device at or above the gas volumetric flow rate or duct static pressure limit.

TABLE 2 TO SUBPART NNNN.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART NNNN

Citation	Subject	Applicable to subpart NNNN	Explanation
§ 63.1(a)(1)–(14) .....	General Applicability .....	Yes.	Applicability to subpart NNNN is also specified in § 63.4081.
§ 63.1(b)(1)–(3) .....	Initial Applicability Determination .....	Yes .....	
§ 63.1(c)(1) .....	Applicability After Standard Established	Yes.	Area sources are not subject to subpart NNNN.
§ 63.1(c)(2)–(3) .....	Applicability of Permit Program for Area Sources	No .....	
§ 63.1(c)(4)–(5) .....	Extensions and Notifications .....	Yes.	

TABLE 2 TO SUBPART NNNN.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART NNNN—Continued

Citation	Subject	Applicable to subpart NNNN	Explanation
§ 63.1(e)	Applicability of Permit Program Before Relevant Standard is Set.	Yes.	
§ 63.2	Definitions	Yes	Additional definitions are specified in § 63.4181.
§ 63.3(a)–(c)	Units and Abbreviations	Yes.	
§ 63.4(a)(1)–(5)	Prohibited Activities	Yes.	
§ 63.4(b)–(c)	Circumvention/ Severability	Yes.	
§ 63.5(a)	Construction/ Reconstruction	Yes.	
§ 63.5(b)(1)–(6)	Requirements for Existing, Newly Constructed, and Reconstructed Sources.	Yes.	
§ 63.5(d)	Application for Approval of Construction/ Reconstruction.	Yes.	
§ 63.5(e)	Approval of Construction/ Reconstruction	Yes.	
§ 63.5(f)	Approval of Construction/ Reconstruction Based on Prior State Review.	Yes.	
§ 63.6(a)	Compliance With Standards and Maintenance Requirements—Applicability.	Yes.	
§ 63.6(b)(1)–(7)	Compliance Dates for New and Reconstructed Sources.	Yes.	Section 63.4083 specifies the compliance dates.
§ 63.6(c)(1)–(5)	Compliance Dates for Existing Sources	Yes	Section 63.4083 specifies the compliance dates.
§ 63.6(e)(1)–(2)	Operation and Maintenance	Yes.	
§ 63.6(e)(3)	Startup, Shutdown, and Malfunction Plan	Yes	Only sources using an add-on control device to comply with the standard must complete startup, shutdown, and malfunction plans.
63.6(f)(1)	Compliance Except During Startup, Shutdown, and Malfunction.	Yes	Applies only to sources using an add-on control device to comply with the standard
63.6(f)(2)–(3)	Methods for Determining Compliance	Yes.	
63.6(g)(1)–(3)	Use of an Alternative Standard	Yes.	
63.6(h)	Compliance With Opacity/Visible Emission Standards.	No	Subpart NNNN does not establish opacity standards and does not require continuous opacity monitoring systems (COMS).
63.6(i)(1)–(16)	Extension of Compliance	Yes.	
63.6(j)	Presidential Compliance Exemption	Yes.	
63.7(a)(1)	Performance Test Requirements—Applicability.	Yes	Applies to all affected sources. Additional requirements for performance testing are specified in §§ 63.4164, 63.4165, and 63.4166.
63.7(a)(2)	Performance Test Requirements—Dates	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standard. Section 63.4160 specifies the schedule for performance test requirements that are earlier than those specified in § 63.7(a)(2).
63.7(a)(3)	Performance Tests Required By the Administrator.	Yes.	
63.7(b)–(e)	Performance Test Requirements—Notification, Quality Assurance, Facilities Necessary for Safe Testing, Conditions During Test.	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standard.
63.7(f)	Performance Test Requirements—Use of Alternative Test Method.	Yes	Applies to all test methods except those used to determine capture system efficiency.
63.7(g)–(h)	Performance Test Requirements—Data Analysis, Recordkeeping, Reporting, Waiver of Test.	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standard.
§ 63.8(a)(1)–(3)	Monitoring Requirements—Applicability	Yes	Applies only to monitoring of capture system and control device efficiency at sources using these to comply with the standard. Additional requirements for monitoring are specified in 63.4168.
§ 63.8(a)(4)	Additional Monitoring Requirements	No	Subpart NNNN does not have monitoring requirements for flares.
§ 63.8(b)	Conduct of Monitoring	Yes.	

TABLE 2 TO SUBPART NNNN.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART NNNN—Continued

Citation	Subject	Applicable to subpart NNNN	Explanation
§ 63.8(c)(1)–(3)	CMS Operation and Maintenance	Yes	Applies only to monitoring of capture system and control device efficiency at sources using these to comply with the standard. Additional requirements for CMS operations and maintenance are specified in § 63.4168.
§ 63.8(c)(4)	Continuous Monitoring Systems	No	Section 63.4168 specifies the requirements for the operation of CMS for capture systems and control devices at sources using these to comply.
§ 63.8(c)(5)	COMS	No	Subpart NNNN does not have opacity or visible emission standards.
§ 63.8(c)(6)	CMS Requirements	No	Section 63.4168 specifies the requirements for monitoring systems for capture systems and control devices at sources using these to comply.
§ 63.8(c)(7)–(8)	CMS Out of Control Periods and Reporting.	Yes.	
§ 63.8(d)–(e)	Quality Control Program and CMS Performance Evaluation.	No	Subpart NNNN does not require the use of Performance continuous emissions monitoring systems.
§ 63.8(f)(1)–(5)	Use of an Alternative Monitoring Method	Yes.	
§ 63.8(f)(6)	Alternative to Relative Accuracy Test	No	Subpart NNNN does not require the use of continuous emissions monitoring systems.
§ 63.8(g)(1)–(5)	Data Reduction	No	Sections 63.4163 and 63.4168 specify monitoring data reduction.
§ 63.9(a)–(d)	Notification Requirements	Yes.	
§ 63.9(e)	Notification of Performance Test	Yes	Applies only to capture system and control device performance tests at sources using these to comply with the standard.
§ 63.9(f)	Notification of Visible Emissions/Opacity Test.	No	Subpart NNNN does not have opacity or visible standards.
§ 63.9(g)(1)–(3)	Additional Notifications When Using CMS.	No	Subpart NNNN does not require the use of continuous emissions monitoring systems.
§ 63.9(h)	Notification of compliance Status	Yes	Section 63.4110 specifies the dates for submitting the notification of compliance status.
§ 63.9(i)	Adjustment of Submittal Deadlines	Yes.	
§ 63.9(j)	Change in Previous Information	Yes.	
§ 63.10(a)	Recordkeeping/Reporting—Applicability and General Information.	Yes.	
§ 63.10(b)(1)	General Recordkeeping Requirements	Yes	Additional requirements are specified in §§ 63.4130 and 63.4131.
§ 63.10(b)(2)(i)–(v)	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS.	Yes	Requirements for Startup, Shutdown, and Malfunction records only apply to add-on control devices used to comply with the standard.
§ 63.10(b)(2)(vi)–(xi)		Yes.	
§ 63.10(b)(2)(xii)	Records	Yes.	
§ 63.10(b)(2)(xiii)		No	Subpart NNNN does not require the use of continuous emissions monitoring systems.
§ 63.10(b)(2)(xiv)		Yes.	
§ 63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations.	Yes.	
§ 63.10(c)(1)–(6)	Additional Recordkeeping Requirements for Sources with CMS.	Yes.	
§ 63.10(c)(7)–(8)		No	The same records are required in § 63.4120(a)(4).
§ 63.10(c)(9)–(15)		Yes.	
§ 63.10(d)(1)	General Reporting Requirements	Yes	Additional requirements are specified in § 63.4120.
§ 63.10(d)(2)	Report of Performance Test Results	Yes	Additional requirements are specified in § 63.4120(h).
§ 63.10(d)(3)	Reporting Opacity or Visible Emissions Observations.	No	Subpart NNNN does not require opacity or visible emissions observations.
§ 63.10(d)(4)	Progress Reports for Sources with Compliance Extensions.	Yes.	

TABLE 2 TO SUBPART NNNN.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART NNNN—Continued

Citation	Subject	Applicable to subpart NNNN	Explanation
§ 63.10(d)(5)	Startup, Shutdown, and Malfunction Reports.	Yes	Applies only to add-on control devices at sources using these to comply with the standard.
§ 63.10(e)(1)–(2)	Additional CMS Reports	No	Subpart NNNN does not require the use of continuous emissions monitoring systems.
§ 63.10(e)(3)	Excess Emissions/CMS Performance Reports.	No	Section 63.4120(g) specifies the contents of periodic compliance reports.
§ 63.10(e)(4)	COMS Data Reports	No	Subpart NNNN does not specify requirements for opacity or COMS.
§ 63.10(f)	Recordkeeping/Reporting Waiver	Yes.	
§ 63.11	Control Device Requirements Flares	No	Subpart NNNN does not specify use of flares for Flares compliance.
§ 63.12	State Authority and Delegations	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by Reference	Yes.	
§ 63.15	Availability of Information/Confidentiality	Yes.	

TABLE 3 TO SUBPART NNNN. ORGANIC HAP CONTENT OF SOLVENTS AND SOLVENT BLENDS

Solvent/solvent blend	CAS. No.	Average organic HAP mass fraction	Typical organic HAP, percent by mass
(1) Toluene	108–88–3	1.0	Toluene.
(2) Xylene(s)	1330–20–7	1.0	Xylenes, ethylbenzene.
(3) Hexane	110–54–3	0.5	n–hexane.
(4) n–Hexane	110–54–3	1.0	n–hexane
(5) Ethylbenzene	100–41–4	1.0	Ethylbenzene.
(6) Aliphatic 140	.....	0	None
(7) Aromatic 100	.....	0.02	1% xylene, 1% cumene
(8) Aromatic 150	.....	0.09	Naphthalene
(9) Aromatic naphtha	64742–95–6	0.02	1% xylene, 1% cumene
(10) Aromatic solvent	64742–94–5	0.1	Naphthalene
(11) Exempt mineral spirits	8032–32–4	0	None
(12) Lignoines (VM & P)	8032–32–4	0	None
(13) Lactol spirits	64742–89–6	0.15	Toluene
(14) Low aromatic white spirit	64742–82–1	0	None
(15) Mineral spirits	64742–88–7	0.01	Xylenes
(16) Hydrotreated naphtha	64742–48–9	0	None
(17) Hydrotreated light distillate	64742–47–8	0.001	Toluene
(18) Stoddard solvent	8052–41–3	0.01	Xylenes
(19) Super high-flash naphtha	64742–95–6	0.05	Xylenes
(20) Varsol® solvent	8052–49–3	0.01	0.5% xylenes, 0.5% ethyl benzene.
(21) VM & P naphtha	64742–89–8	0.06	3% toluene, 3% xylene.
(22) Petroleum distillate mixture	68477–31–6	0.08	4% naphthalene, 4% biphenyl.

TABLE 4 TO SUBPART NNNN. ORGANIC HAP CONTENT OF PETROLEUM SOLVENT GROUPS

Solvent type	Average content organic HAP mass fraction	Typical organic HAP percent by mass
Aliphatic <sup>1</sup>	0.03	1% Xylene, 1% Toluene, and 1% Ethylbenzene.
Aromatic <sup>2</sup>	0.06	4% Xylene, 1% Toluene, and 1% Ethylbenzene.

<sup>1</sup>Mineral Spirits 135, Mineral Spirits 150 EC, Naphtha, Mixed Hydrocarbon, Aliphatic Hydrocarbon, Aliphatic Naphtha, Naphthol Spirits, Petroleum Spirits, Petroleum Oil, Petroleum Naphtha, Solvent Naphtha, Solvent Blend.

<sup>2</sup>Medium-flash Naphtha, High-flash Naphtha, Aromatic Naphtha, Light Aromatic Naphtha, Light Aromatic Hydrocarbons, Aromatic Hydrocarbons, Light Aromatic Solvent.