

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

[EPA-HQ-OAR-2018-0746; FRL-10010-27-OAR]

RIN 2060-AT85

**National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing Residual Risk and Technology Review****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

**SUMMARY:** This action finalizes the residual risk and technology review (RTR) conducted for the Miscellaneous Organic Chemical Manufacturing source category regulated under national emission standards for hazardous air pollutants (NESHAP). The U.S. Environmental Protection Agency (EPA) is finalizing decisions concerning the RTR, including amendments pursuant to the technology review for equipment leaks and heat exchange systems, and also amendments pursuant to the risk review to specifically address ethylene oxide emissions from storage tanks, process vents, and equipment leaks. In addition, we are taking final action to correct and clarify regulatory provisions related to emissions during periods of startup, shutdown, and malfunction (SSM), including removing general exemptions for periods of SSM, adding work practice standards for periods of SSM where appropriate, and clarifying regulatory provisions for certain vent control bypasses. The EPA is also taking final action to add monitoring and operational requirements for flares that control ethylene oxide emissions and flares used to control emissions from processes that produce olefins and polyolefins; add provisions for electronic reporting of performance test results and other reports; and include other technical corrections to improve consistency and clarity. We estimate that these final amendments will reduce hazardous air pollutants (HAP) emissions from this source category by approximately 107 tons per year (tpy) and reduce ethylene oxide emissions from this source category by approximately 0.76 tpy. We also estimate that these final amendments will reduce excess emissions of HAP from flares that control ethylene oxide emissions and flares used to control emissions from processes that produce olefins and polyolefins by an additional 263 tpy.

**DATES:** This final rule is effective on August 12, 2020. The incorporation by reference (IBR) of certain publications listed in the rule is approved by the Director of the Federal Register as of August 12, 2020.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2018-0746. All documents in the docket are listed on the <https://www.regulations.gov/> website. Although listed, some information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <https://www.regulations.gov/>. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room was closed to public visitors on March 31, 2020, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. There is a temporary suspension of mail delivery to the EPA, and no hand deliveries are currently accepted. For further information and updates on EPA Docket Center services and the current status, please visit us online at <https://www.epa.gov/dockets>.

**FOR FURTHER INFORMATION CONTACT:** For questions about this final action, contact Ms. Tegan Lavoie, Sector Policies and Programs Division (E-143-01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5110; and email address: [lavoie.tegan@epa.gov](mailto:lavoie.tegan@epa.gov). For specific information regarding the risk modeling methodology, contact Mr. Matthew Woody, Health and Environmental Impacts Division (C539-02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-1535; and email address: [woody.matthew@epa.gov](mailto:woody.matthew@epa.gov). For information about the applicability of the NESHAP to a particular entity, contact Mr. John Cox, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460; telephone number: (202) 564-1395; and email address: [cox.john@epa.gov](mailto:cox.john@epa.gov).

**SUPPLEMENTARY INFORMATION:**

*Preamble acronyms and abbreviations.* We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

ACC American Chemistry Council  
 AEGL acute exposure guideline level  
 APCD air pollution control device  
 AMEL Alternative means of emission limitation  
 ANSI American National Standards Institute  
 BAAQMD Bay Area Air Quality Management District  
 Btu/scf British thermal unit per standard cubic foot  
 CAA Clean Air Act  
 CAP Chemical Accident Prevention  
 CDX Central Data Exchange  
 CEDRI Compliance and Emissions Data Reporting Interface  
 CEMS continuous emissions monitoring systems  
 CFR Code of Federal Regulations  
 CRA Congressional Review Act  
 EPA Environmental Protection Agency  
 EPCRA Emergency Planning and Community Right-To-Know Act  
 ERT Electronic Reporting Tool  
 FID flame ionization detector  
 FTIR fourier transfer infrared spectrometry  
 gpm gallons per minute  
 HAP hazardous air pollutant(s)  
 HCl hydrochloric acid  
 HES heat exchanger systems  
 HI hazard index  
 HON Hazardous Organic NESHAP  
 HQ hazard quotient  
 HRVOC highly reactive volatile organic compounds  
 IBR incorporation by reference  
 ICR Information Collection Request  
 IRIS Integrated Risk Information System  
 kg/yr kilograms per year  
 km kilometers  
 lb/yr pounds per year  
 LDAR leak detection and repair  
 LEL lower explosive limit  
 MACT maximum achievable control technology  
 MCPU miscellaneous organic chemical manufacturing process unit  
 MIR maximum individual risk  
 MON Miscellaneous Organic Chemical Manufacturing NESHAP  
 NAICS North American Industry Classification System  
 NEI National Emissions Inventory  
 NESHAP national emission standards for hazardous air pollutants  
 NHVcz net heating value of the combustion zone gas  
 NRDC Natural Resources Defense Council  
 NSPS new source performance standards  
 NTTAA National Technology Transfer and Advancement Act  
 OMB Office of Management and Budget  
 PB-HAP hazardous air pollutants known to be persistent and bio-accumulative in the environment  
 PDF portable document format  
 PDH propane dehydrogenation

PFTIR passive fourier transfer infrared spectrometry  
 POM polycyclic organic matter  
 ppm parts per million  
 ppmv parts per million by volume  
 ppmw parts per million by weight  
 PRA Paperwork Reduction Act  
 PRD pressure relief device(s)  
 psig pounds per square inch gauge  
 PSM Process Safety Management  
 RACT reasonably available control technology  
 REL reference exposure level  
 RFA Regulatory Flexibility Act  
 RTR residual risk and technology review  
 SCAQMD South Coast Air Quality Management District  
 SSM startup, shutdown, and malfunction  
 SV screening value  
 TAC Texas Administrative Code  
 TCEQ Texas Commission on Environmental Quality the Court United States Court of Appeals for the District of Columbia Circuit  
 TOC total organic compound  
 TOSHI target organ-specific hazard index  
 tpy tons per year  
 TRI Toxics Release Inventory  
 UMRA Unfunded Mandates Reform Act  
 URE unit risk estimate  
 VCS voluntary consensus standards  
 VOC volatile organic compound(s)

*Background information.* On December 17, 2019 (84 FR 69182), the EPA proposed revisions to the Miscellaneous Organic Chemical Manufacturing NESHAP (MON) based on our RTR. In this action, we are finalizing decisions and revisions for the rule. We summarize some of the more significant comments we timely received regarding the proposed rule and provide our responses in this preamble. A summary of all other public comments on the proposal and the EPA's responses to those comments is available in the *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, in Docket ID No. EPA-HQ-OAR-2018-0746. A "tracked changes" version of the regulatory

language that incorporates the changes in this action is available in the docket. *Organization of this document.* The information in this preamble is organized as follows:

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**I. General Information**

*A. Does this action apply to me?*

*Regulated entities.* Categories and entities potentially regulated by this action are shown in Table 1 of this preamble.

TABLE 1—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

NESHAP and Source Category	NAICS <sup>1</sup> code
Miscellaneous Organic Chemical Manufacturing .....	3251, 3252, 3253, 3254, 3255, 3256, and 3259, with several exceptions.

<sup>1</sup> North American Industry Classification System.

Table 1 of this preamble is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by the final action for the source category listed. To determine whether your facility is affected, you should examine the

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

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

In addition to being available in the docket, an electronic copy of this final action will also be available on the internet. Following signature by the

EPA Administrator, the EPA will post a copy of this final action at: <https://www.epa.gov/stationary-sources-air-pollution/miscellaneous-organic-chemical-manufacturing-national-emission>. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version and key technical documents at this same website.

Additional information is available on the RTR website at <https://www.epa.gov/stationary-sources-air-pollution/risk-and-technology-review-national-emissions-standards-hazardous>. This information includes an overview of the RTR program and links to project websites for the RTR source categories.

### C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the Court) by October 13, 2020. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

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

## II. Background

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

On March 13, 2017, the U.S. District Court for District of Columbia ordered the EPA to perform all acts or duties required by CAA section 112(f)(2) and CAA section 112(d)(6) for 20 source categories, including Miscellaneous Organic Chemical Manufacturing, within three years of the date of the court order (See *California Communities Against Toxics, et al. v. Scott Pruitt*, 241 F. Supp. 3d 199 (D.D.C. 2017)). On February 19, 2020, the U.S. District Court for District of Columbia granted the EPA an extension on the final rule deadline for the Miscellaneous Organic Chemical Manufacturing source category from March 13, 2020, to May 29, 2020.

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of HAP from stationary sources. In the first stage, we must identify categories of sources emitting one or more of the HAP listed in CAA section 112(b) and then promulgate technology-based NESHAP for those sources. "Major sources" are those that emit, or have the potential to emit, any single HAP at a rate of 10 tons per year (tpy) or more, or 25 tpy or more of any combination of HAP. For major sources, these standards are commonly referred to as maximum achievable control technology (MACT) standards and must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts). In developing MACT standards, CAA section 112(d)(2) directs the EPA to consider the application of measures, processes, methods, systems, or techniques, including, but not limited to those that reduce the volume of or eliminate HAP emissions through process changes, substitution of materials, or other modifications; enclose systems or processes to eliminate emissions; collect, capture, or treat HAP when released from a process, stack, storage, or fugitive emissions point; are design, equipment, work practice, or operational standards; or any combination of the above.

For MACT standards, the statute specifies certain minimum stringency requirements, which are referred to as MACT floor requirements, and which may not be based on cost considerations. See CAA section 112(d)(3). For new sources, the MACT floor cannot be less stringent than the emission control 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 standards, we must also consider control options that are more stringent than the floor under CAA section 112(d)(2). We may establish standards more stringent than the floor, after consideration of the cost of achieving the emissions reductions, any non-air quality health and environmental impacts, and energy requirements.

In the second stage of the regulatory process, the CAA requires the EPA to undertake two different analyses, which we refer to as the technology review and the residual risk review. Under the technology review, we must review the technology-based standards and revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less frequently than every 8 years, pursuant to CAA section 112(d)(6). Under the residual risk review, we must evaluate the risk to public health remaining after application of the technology-based standards and revise the standards, if necessary, to provide an ample margin of safety to protect public health or to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. The residual risk review is required within 8 years after promulgation of the technology-based standards, pursuant to CAA section 112(f). In conducting the residual risk review, if the EPA determines that the current standards provide an ample margin of safety to protect public health, it is not necessary to revise the MACT standards pursuant to CAA section 112(f).<sup>1</sup> For more information on the statutory authority for this rule, see 84 FR 69182, December 17, 2019.

### B. What is the Miscellaneous Organic Chemical Manufacturing source category and how does the NESHAP regulate HAP emissions from the source category?

The EPA promulgated the current NESHAP, herein called the Miscellaneous Organic Chemical

<sup>1</sup> The Court has affirmed this approach of implementing CAA section 112(f)(2)(A): *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Cir. 2008) ("If EPA determines that the existing technology-based standards provide an 'ample margin of safety,' then the Agency is free to readopt those standards during the residual risk rulemaking.")

Manufacturing NESHAP (MON) on November 10, 2003 (68 FR 63852), and further amended the MON on July 1, 2005 (70 FR 38562), and July 14, 2006 (71 FR 40316). The standards are codified at 40 Code of Federal Regulations (CFR) part 63, subpart FFFF. The MON regulates HAP emissions from miscellaneous organic chemical manufacturing process units (MCPUs) located at major sources. An MCU includes a miscellaneous organic chemical manufacturing process, as defined in 40 CFR 63.2550(i), and must meet the following criteria: (1) It manufactures any material or family of materials described in 40 CFR 63.2435(b)(1); (2) it processes, uses, or generates any of the organic HAP described in 40 CFR 63.2435(b)(2); and, (3) except for certain process vents that are part of a chemical manufacturing process unit, as identified in 40 CFR 63.100(j)(4), the MCU is not an affected source or part of an affected source under another subpart of 40 CFR part 63. An MCU also includes any assigned storage tanks and transfer racks; equipment in open systems that is used to convey or store water having the same concentration and flow characteristics as wastewater; and components such as pumps, compressors, agitators, pressure relief devices (PRDs), sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are used to manufacture any material or family of materials described in 40 CFR 63.2435(b)(1). Sources of HAP emissions regulated by the MON include the following: process vents, storage tanks, transfer racks, equipment leaks, wastewater streams, and heat exchange systems.

As of November 6, 2018, there were 201 miscellaneous organic chemical manufacturing facilities identified and in operation and subject to the MON standards, herein referred to as "MON facilities." This facility population count was developed using methods described in section II.C of the proposal preamble (84 FR 69182, December 17, 2019). A complete list of known MON facilities is available in Appendix 1 of the document, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2019 Risk and Technology Review Proposed Rule*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0011).

*C. What changes did we propose for the Miscellaneous Organic Chemical Manufacturing source category in our December 17, 2019, RTR proposal?*

On December 17, 2019, the EPA published a proposed rule in the **Federal Register** for the MON, 40 CFR part 63, subpart FFFF, that took into consideration the RTR analyses (84 FR 69182). We proposed to find that the risks from the source category are unacceptable. We proposed to address risk by revising the MON pursuant to CAA section 112(f)(2) to require control of ethylene oxide emissions from process vents, storage tanks, and equipment "in ethylene oxide service."<sup>2</sup> We also proposed that these control requirements would both achieve acceptable risks and provide an ample margin of safety to protect public health and more stringent standards are not necessary to prevent an adverse environmental effect.

For process vents, we proposed to either reduce emissions of ethylene oxide by (1) venting emissions through a closed-vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight, to a concentration less than 1 part per million by volume (ppmv) for each process vent, or to less than 5 pounds per year (lb/yr) for all combined process vents; or (2) venting emissions through a closed-vent system to a flare meeting the proposed flare operating requirements. For storage tanks, we proposed to reduce emissions of ethylene oxide by either (1) venting emissions through a closed-vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight or to a concentration less than 1 ppmv for each storage tank vent; or (2) venting emissions through a closed-vent system to a flare meeting the

<sup>2</sup>For process vents, we proposed to define "in ethylene oxide service" to mean that each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled, undiluted ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). For storage tanks of any capacity and vapor pressure, we proposed to define "in ethylene oxide service" to mean that the concentration of ethylene oxide of the stored liquid is greater than or equal to 1 part per million by weight (ppmw). We proposed that the exemptions for "vessels storing organic liquids that contain HAP only as impurities" and "pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere" listed in the definition of "storage tank" at 40 CFR 63.2550(i) do not apply for storage tanks in ethylene oxide service. For the ethylene oxide equipment leak provisions, we proposed to define "in ethylene oxide service" to mean any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide.

proposed flare operating requirements. We proposed removing the option to allow use of a design evaluation in lieu of performance testing to demonstrate compliance for both process vents and storage tanks in ethylene oxide service. We also proposed that owners or operators that choose to control emissions with a non-flare control device conduct an initial performance test on each control device in ethylene oxide service to verify performance at the required level of control, and we proposed conducting periodic performance testing on non-flare control devices in ethylene oxide service every 5 years.

To reduce risks from leaking equipment in ethylene oxide service, we co-proposed two options, *i.e.*, Control Option 1 and Control Option 2. In equipment leak co-proposed Control Option 1, we proposed that all light liquid pumps in ethylene oxide service be monitored monthly at a leak definition of 1,000 parts per million (ppm), and when a leak is detected, it be repaired as soon as practicable, but not later than 15 calendar days after it is detected. Additionally, under co-proposed Control Option 1, we proposed that the leak repair exemption available for pumps at 40 CFR 63.1026(b)(3), 40 CFR 63.163(c)(3), and 40 CFR 65.107(b)(3) would not apply to equipment in ethylene oxide service. Also, as part of co-proposed Control Option 1, we proposed that all gas/vapor and light liquid connectors in ethylene oxide service be monitored annually at a leak definition of 500 ppm, and when a leak is detected, it be repaired as soon as practicable, but not later than 15 calendar days after it is detected. In equipment leak co-proposed Control Option 2, we proposed that more stringent equipment leak standards would apply to the facilities with a maximum individual risk (MIR) greater than 100-in-1 million after imposition of the proposed standards for process vents and storage tanks, as determined by this risk analysis (*i.e.*, Lanxess Corporation and Huntsman Performance). For these two facilities, pumps in ethylene oxide service would be required to be leakless (*i.e.*, have zero emissions) and monitored annually to verify there are no emissions. Additionally, valves in ethylene oxide service would be required to either be leakless and monitored annually or not be leakless and be monitored quarterly. For pumps and valves in ethylene oxide service, we proposed that equipment is considered leaking if an instrument reading above background is found. Furthermore, at

the two higher risk facilities with a MIR greater than 100-in-1 million, we proposed that connectors in ethylene oxide service would be monitored monthly at a leak definition of 100 ppm. We proposed that when a leak is detected it would be repaired as soon as practicable, but not later than 15 calendar days after it is detected, and a first attempt at repair be made no later than 5 calendar days after the leak is detected. As part of co-proposed Control Option 2, all other facilities with MON equipment in ethylene oxide service would be subject to the standards previously described in equipment leak co-proposed Control Option 1.

In addition, pursuant to the technology review for the Miscellaneous Organic Chemical Manufacturing source category, we proposed that no revisions to the current standards are necessary for process vents, storage tanks, transfer racks, and wastewater streams; however, we did propose changes for equipment leaks and heat exchange systems. We proposed revisions to the equipment leak requirements, pursuant to CAA section 112(d)(6), to lower the leak definition for pumps in light liquid service at existing batch processes from 10,000 ppmv to 1,000 ppmv with monthly monitoring and clarify that you must initially monitor for leaks within 30 days after initial startup of the equipment. In addition, we proposed revisions to the heat exchange system requirements, pursuant to CAA section 112(d)(6), to require owners or operators to use the Modified El Paso Method and repair leaks of total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or greater.

We also proposed the following amendments:

- Revisions to the operating and monitoring requirements for flares that control ethylene oxide emissions, flares used to control emissions from processes that produce olefins and polyolefins, and providing the option for an owner or operator of a flare outside of this subset to choose to opt in to these revised requirements in lieu of complying with the current flare standards, pursuant to CAA section 112(d)(2) and (3);

- Requirements and clarifications for periods of SSM and bypasses, including for PRD releases, bypass lines on closed vent systems, maintenance activities, and certain gaseous streams routed to a fuel gas system, pursuant to CAA section 112(d)(2) and (3);

- Revisions to the SSM provisions of the MON (in addition to those related to vent control bypasses) in order to ensure that they are consistent with the Court

decision in *Sierra Club v. EPA*, 551 F. 3d 1019 (D.C. Cir. 2008), which vacated two provisions that exempted source owners or operators from the requirement to comply with otherwise applicable CAA section 112(d) emission standards during periods of SSM;

- A requirement for electronic submittal of performance test results and reports, performance evaluation reports, and compliance reports;
- Clarifications to the requirements for nonregenerative adsorbers, and regenerative adsorbers that are regenerated onsite;
- IBR of an alternative test method for EPA Method 18 (with caveats);
- IBR of an alternative test method for EPA Method 101A and EPA Method 29 (portion for mercury only);
- IBR of an alternative test method for EPA Method 624;
- Use of an alternative test method for EPA Method 3B (for the manual procedures only and not the instrumental procedures);
- Use of an alternative test method for EPA Method 320 (with caveats); and
- Several minor editorial and technical changes in the subpart.

### III. What is included in this final rule?

This action provides the EPA's final determinations pursuant to the RTR provisions of CAA section 112 for the Miscellaneous Organic Chemical Manufacturing source category and amends the MON based on those determinations. This action also finalizes other changes to the NESHAP, including adding requirements and clarifications for periods of SSM and bypasses; revising the operating and monitoring requirements for flares that control ethylene oxide emissions, flares used to control emissions from processes that produce olefins and polyolefins and allowing flares outside of this subset to comply with these amended flare requirements; adding provisions for electronic reporting of performance test results and reports, performance evaluation reports, and compliance reports; and other minor editorial and technical changes. This action also reflects several changes to the December 17, 2019, RTR proposal (84 FR 69182), in consideration of comments received during the public comment period as described in section IV of this preamble.

#### A. What are the final rule amendments based on the risk review for the Miscellaneous Organic Chemical Manufacturing source category?

This section describes the final amendments to the MON being promulgated pursuant to CAA section

112(f). Consistent with the proposal, the EPA determined that the risks for this source category under the current MACT provisions are unacceptable. When risks are unacceptable, the EPA must determine the emissions standards necessary to reduce risk to an acceptable level. As such, the EPA is promulgating final amendments to the MON pursuant to CAA section 112(f)(2) that require control of ethylene oxide for process vents, storage tanks, and equipment in ethylene oxide service, with some changes in the final rule due to comments received during the public comment period. As discussed in section IV.A of this preamble, implementation of these controls will reduce risk to an acceptable level that also provides an ample margin of safety to protect public health. For process vents in ethylene oxide service, the EPA is finalizing the requirement, as proposed, to either reduce emissions of ethylene oxide by (1) venting emissions through a closed-vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight, to a concentration less than 1 ppmv for each process vent, or to less than 5 lb/yr for all combined process vents; or (2) venting emissions through a closed-vent system to a flare meeting the flare operating requirements discussed in sections IV.A.1 and IV.C.2 of the proposal preamble (84 FR 69182, December 17, 2019). However, based on comments received on the proposed rulemaking, we are revising the proposed definition of "in ethylene oxide service" for process vents by removing "undiluted" from the mass-based criteria and removing the phrase "anywhere in the process." In the final rule, a process vent in ethylene oxide service means each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled, ethylene oxide emissions greater than or equal to 5 lb/yr [2.27 kilograms per year (kg/yr)]. In addition, based on comments received on the proposed rulemaking, we are revising the definitions of "batch process vent" and "continuous process vent" in the final rule to clarify that: (1) The existing 50 ppmv HAP and 200 lb/yr uncontrolled HAP emission cut-offs do not apply to batch process vents in ethylene oxide service; and (2) the existing 0.005 weight percent total organic HAP cut-off in 40 CFR 63.107(d) does not apply to continuous process vents in ethylene oxide service.

For storage tanks in ethylene oxide service, we are finalizing a requirement, as proposed, to reduce emissions of ethylene oxide by either (1) venting emissions through a closed-vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight or to a concentration less than 1 ppmv for each storage tank vent; or (2) venting emissions through a closed-vent system to a flare meeting the flare operating requirements discussed in sections IV.A.1 and IV.C.2 of the proposal preamble (84 FR 69182, December 17, 2019). However, based on comments received on the proposed rulemaking, we are revising the proposed definition of “in ethylene oxide service” for storage tanks by revising the concentration of ethylene oxide criteria to a 0.1 percent by weight threshold. In the final rule, a storage tank in ethylene oxide service means a storage tank of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide. We are also finalizing, as proposed, that the exemptions for “vessels storing organic liquids that contain HAP only as impurities” and “pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere” listed in the definition of “storage tank” at 40 CFR 63.2550(i) do not apply for storage tanks in ethylene oxide service.

Additionally, for both process vents in ethylene oxide service and storage tanks in ethylene oxide service, we are removing the option to allow use of a design evaluation in lieu of performance testing to demonstrate compliance to ensure that the required level of control is achieved, consistent with the proposal. We are also finalizing, as proposed, that after promulgation of the rule, owners or operators that choose to control emissions with a non-flare control device conduct an initial performance test according to 40 CFR 63.997 and 40 CFR 63.2450(g) on each existing control device in ethylene oxide service and on each newly installed control device in ethylene oxide service to verify performance at the required level of control. Subsequently, we are finalizing that owners or operators conduct periodic performance testing on non-flare control devices in ethylene oxide service every 5 years. We are also finalizing the proposed requirement for continuous monitoring of operating parameters for scrubbers used to control emissions from process vents in ethylene oxide service or storage tanks in ethylene oxide service, to ensure that the factors needed for the reaction to occur are met

(i.e., liquid-to-gas ratio, pressure drop across the scrubber, liquid feed pressure, liquid temperature, and pH), although we are revising the requirement to set the pressure drop across the scrubber and the liquid feed pressure based on the performance test, and instead, we are allowing the limits on these parameters to be based on the manufacturer’s recommendations or engineering analysis. Additionally, we are changing the continuous compliance requirements for the operating parameters, such that compliance with the operating parameter limits is determined on an hourly average basis instead of an instantaneous basis.

For equipment leaks, the EPA is promulgating final amendments for co-proposed equipment leak “Control Option 1” for controlling emissions from MON equipment in ethylene oxide service, except based on comments received on the proposed rulemaking, in lieu of prohibiting PRDs in ethylene oxide service from releasing directly to the atmosphere, we are clarifying in the final rule that these PRDs must comply with the pressure release management work practice standards proposed at 40 CFR 63.2480(e) and (f). We are also clarifying that any release event from PRDs in ethylene oxide service is a deviation of the standard. The EPA is not finalizing co-proposed equipment leak “Control Option 2.” As proposed under equipment leak Control Option 1, we are promulgating the following requirements:

- All light liquid pumps in ethylene oxide service be monitored monthly at a leak definition of 1,000 ppm, and when a leak is detected, it be repaired as soon as practicable, but not later than 15 calendar days after it is detected;
- the leak repair exemption available for pumps at 40 CFR 63.1026(b)(3), 40 CFR 63.163(c)(3), and 40 CFR 65.107(b)(3) does not apply to equipment in ethylene oxide service; and
- all gas/vapor and light liquid connectors in ethylene oxide service are required to be monitored annually at a leak definition of 500 ppm, and when a leak is detected, be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

Refer to section IV.C.2 of the proposal preamble (84 FR 69182, December 17, 2019) for further discussion of co-proposed Control Option 1.

Section IV.A.3 of this preamble provides a summary of key comments we received regarding the risk review and our responses.

*B. What are the final rule amendments based on the technology review for the Miscellaneous Organic Chemical Manufacturing source category?*

For process vents, storage tanks, transfer racks, and wastewater streams in this source category, the EPA is finalizing its proposed determination in the technology review that there are no developments in practices, processes, and control technologies that warrant revisions to the MACT standards. Therefore, we are not finalizing revisions to the MACT standards for these emission sources under CAA section 112(d)(6).

For leaks from equipment not in ethylene oxide service, we determined that there are developments in practices, processes, and control technologies that warrant revisions to the MACT standards for this source category. Therefore, to satisfy the requirements of CAA section 112(d)(6), we are revising the MACT standards, consistent with the proposed rule (84 FR 69182, December 17, 2019), to lower the leak definition for pumps in light liquid service (in an MCPU that has no continuous process vents and is part of an existing source) from 10,000 ppmv to 1,000 ppmv with monthly monitoring to comply with the requirements in 40 CFR part 63, subpart H or UU, or 40 CFR part 65, subpart F, and to require initial monitoring for equipment leaks within 30 days after initial startup of new or replaced equipment. However, based on comments received on the proposed rulemaking, we are clarifying in the final rule that the initial monitoring of equipment is only required if the new or replaced equipment is subject to Table 6 to 40 CFR part 63, subpart FFFF, and is also subject to periodic monitoring with EPA Method 21 of appendix A–7 to 40 CFR part 60; and that the initial monitoring does not apply to equipment classified as unsafe-to-monitor or difficult-to-monitor equipment.

For heat exchange systems, we determined that there are developments in practices, processes, and control technologies that warrant revisions to the MACT standards for this source category. Therefore, to satisfy the requirements of CAA section 112(d)(6), we are revising the MACT standards, consistent with the proposed rule (84 FR 69182, December 17, 2019), to include revisions to the heat exchange system requirements to require owners or operators to use the Modified El Paso Method and repair leaks of total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or greater. However, based on

comments received on the proposed rulemaking, we are also making some technical clarifications to allow compliance with the Modified El Paso Method using an alternative mass-based leak action level of total strippable hydrocarbon equal to or greater than 0.18 kilograms per hour (instead of the proposed concentration-based leak action level) for small heat exchange systems with a recirculation rate of 10,000 gallons per minute (gpm) or less. We are also finalizing the proposed specification that none of the heat exchange system requirements apply to heat exchange systems that have a maximum cooling water flow rate of 10 gpm or less.

Section IV.B.3 of this preamble provides a summary of key comments we received on the technology review and our responses.

*C. What are the final rule amendments pursuant to CAA section 112(d)(2) and (3) and 112(h) for the Miscellaneous Organic Chemical Manufacturing source category?*

Consistent with *Sierra Club v. EPA* 551 F. 3d 1019 (D.C. Cir. 2008) and the December 17, 2019, RTR proposal (84 FR 69182), we are revising monitoring and operational requirements for flares that control ethylene oxide emissions and flares used to control emissions from processes that produce olefins and polyolefins (with the option for an owner or operator of a flare outside of this subset to choose to opt in to the proposed requirements in lieu of complying with the current flare standards) to ensure these flares meet the MACT standards at all times when controlling HAP emissions. However, based on comments received on the proposed rulemaking, we are not finalizing the work practice standard for velocity exceedances for flares operating above their smokeless capacity. We are also clarifying in the final rule that a “flare that controls ethylene oxide emissions” is a flare that controls ethylene oxide emissions from affected sources in ethylene oxide service as defined in 40 CFR 63.2550. In addition, we are clarifying in the final rule that “an MCPU that produces olefins or polyolefins” includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product; conversely, by-products and impurities as defined in 40 CFR 63.101, as well as wastes and trace contaminants, are not considered products.

In addition, we are finalizing provisions and clarifications as proposed for periods of SSM and bypasses, including PRD releases;

bypass lines on closed vent systems; maintenance activities; and certain gaseous streams routed to a fuel gas system to ensure that CAA section 112 standards apply continuously.

Lastly, based on comments received on the proposed rulemaking, we are finalizing a separate standard for storage vessel degassing for storage vessels subject to the control requirements in Table 4 to 40 CFR part 63, subpart FFFF.

Section IV.C.3 of this preamble provides a summary of key comments we received on the CAA section 112(d)(2) and (3) provisions and our responses.

*D. What are the final rule amendments addressing emissions during periods of SSM?*

We are finalizing the proposed amendments to the MON to remove and revise provisions related to SSM. In its 2008 decision in *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), the Court vacated portions of two provisions in the EPA’s CAA section 112 regulations governing the emissions of HAP during periods of SSM. Specifically, the Court vacated the SSM exemptions contained in 40 CFR 63.6(f)(1) and (h)(1), holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemptions violate the CAA’s requirement that some CAA section 112 standards apply at all times. As detailed in section IV.E.1 of the proposal preamble (see 84 FR 69182, December 17, 2019), the MON requires that the standards apply at all times (see 40 CFR 63.2450(a)(2)), consistent with the Court decision in *Sierra Club v. EPA*, 551 F. 3d 1019 (D.C. Cir. 2008). We determined that facilities in this source category can meet the applicable MACT standards at all times, including periods of startup and shutdown. As discussed in the proposal preamble, the EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards, although the EPA has the discretion to set standards for malfunction periods where feasible. Where appropriate, and as discussed in section III.C of this preamble, we are also finalizing alternative standards for certain emission points during periods of SSM to ensure a CAA section 112 standard applies “at all times.” Other than for those specific emission points discussed in section III.C of this preamble, the EPA determined that no additional standards are needed to address emissions during periods of SSM. We determined that facilities in this source category can meet the

applicable MACT standards at all times, including periods of startup and shutdown.

We are finalizing revisions to the General Provisions table (Table 12 to 40 CFR part 63, subpart FFFF) to eliminate requirements that include rule language providing an exemption for periods of SSM. Additionally, we are finalizing our proposal to eliminate language related to SSM that treats periods of startup and shutdown the same as periods of malfunction. Finally, we are finalizing our proposal to revise reporting and recordkeeping requirements for deviations as they relate to exemptions for periods of SSM. As discussed in section IV.E.1 of the proposal preamble, these revisions are consistent with the requirement in 40 CFR 63.2450(a)(2) that the standards apply at all times. We are also finalizing, as proposed, a revision to the performance testing requirements. The final performance testing provisions prohibit performance testing during SSM because these conditions are not representative of normal operating conditions. The final rule also requires, as proposed, that operators maintain records to document that operating conditions during the test represent normal operations.

The legal rationale and detailed revisions for SSM periods that we are finalizing here are set forth in the proposal preamble (84 FR 69224–69227, December 17, 2019). Also, based on comments received during the public comment period, we are revising specific references listed in 40 CFR 63.2450(e)(4), 40 CFR 63.2480(f), and 40 CFR 63.2485(p) and (q) to sufficiently address the SSM exemption provisions from subparts referenced by the MON (e.g., the MON references 40 CFR part 63, subparts F, G, SS, UU, WW, and GGG; and each of these referenced subparts have SSM provisions that we are removing in 40 CFR 63.2450(e)(4), 40 CFR 63.2480(f), and 40 CFR 63.2485(p) and (q) for owners or operators that must comply with the MON). In other words, in addition to what we proposed, we are also clarifying that the certain referenced provisions do not apply when demonstrating compliance with the MACT standards, such as phrases like “other than a start-up, shutdown, or malfunction” in the recordkeeping and reporting requirements of 40 CFR part 63, subparts SS and UU. We are also not removing as proposed the term “breakdowns” in 40 CFR 63.998(b)(2)(i) as we determined based on a public comment that removing the term is unnecessary and could result in inaccurate calculation of parameter values. Finally, we are also not

removing 40 CFR 63.998(d)(1)(ii) in its entirety as proposed because we determined based on a public comment received that these records are used to demonstrate compliance with the bypass provisions and do not apply to SSM. As discussed in section III.C of this preamble, we are also finalizing alternative standards for certain emission points (*i.e.*, emergency flaring, PRDs, maintenance activities, and tank degassing) during periods of SSM to ensure a CAA section 112 standard applies “at all times.”

Section IV.D.3 of this preamble provides a summary of key comments we received on the SSM provisions and our responses.

#### *E. What other changes have been made to the NESHAP?*

This rule also finalizes, as proposed, revisions to several other NESHAP requirements. We describe these revisions in this section as well as other proposed provisions that have changed since proposal.

##### 1. Electronic Reporting

To increase the ease and efficiency of data submittal and data accessibility, we are finalizing, as proposed, a requirement that owners or operators of MON facilities submit electronic copies of certain required flare management plans (being finalized at 40 CFR 63.2450(e)(5)(iv)), compliance reports (being finalized at 40 CFR 63.2520(e)), performance test reports (being finalized at 40 CFR 63.2520(f)), and performance evaluation reports (being finalized at 40 CFR 63.2520(g)) through the EPA’s Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). The final rule requires that performance test results collected using test methods that are supported by the EPA’s Electronic Reporting Tool (ERT) as listed on the ERT website<sup>3</sup> at the time of the test be submitted in the format generated through the use of the ERT and that other performance test results be submitted in portable document format (PDF) using the attachment module of the ERT. Similarly, performance evaluation results of continuous emissions monitoring systems (CEMS) measuring relative accuracy test audit pollutants that are supported by the ERT at the time of the test must be submitted in the format generated through the use of the ERT and other performance evaluation results be submitted in PDF using the attachment module of the ERT. For compliance reports, the final

<sup>3</sup> <https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>.

rule requires that owners or operators use the appropriate spreadsheet template to submit information to CEDRI. The final version of the template for these reports will be located on the CEDRI website.<sup>4</sup> The final rule requires that flare management plans be submitted as a PDF upload in CEDRI. In addition, in the final rule, we are correcting an error to clarify that compliance reports must be submitted electronically (*i.e.*, through the EPA’s CDX using the appropriate electronic report template for this subpart) beginning August 12, 2023, or once the reporting template has been available on the CEDRI website for 1 year, whichever date is later. Furthermore, we are finalizing, as proposed, provisions that allow facility operators the ability to seek extensions for submitting electronic reports for circumstances beyond the control of the facility, *i.e.*, for a possible outage in the CDX or CEDRI or for a *force majeure* event in the time just prior to a report’s due date, as well as the process to assert such a claim.

For a more detailed discussion of these final amendments to the MON, see section IV.E.2.b of the proposal preamble (84 FR 69227, December 17, 2019), as well as section VI.C below on compliance with the Paperwork Reduction Act. For a more thorough discussion of electronic reporting, see the memorandum, *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0169).

##### 2. Monitoring for Adsorbers That Cannot Be Regenerated and Regenerative Adsorbers That Are Regenerated Offsite

We are finalizing requirements at 40 CFR 63.2450(e)(7), as proposed, for owners or operators using adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated offsite to use dual (two or more) adsorbent beds in series and conduct monitoring of HAP or total organic compound (TOC) on the outlet of the first adsorber bed in series using a sample port and a portable analyzer or chromatographic analysis. However, we are revising the proposed rule text in this final action to reduce the monitoring frequency in response to public comments. In the final rule, owners or operators will establish the estimated bed life from a

<sup>4</sup> <https://www.epa.gov/electronic-reporting-air-emissions/cedri>.

design evaluation of the adsorber. The monitoring frequency increases as the remaining bed life decreases. Owners or operators will monitor monthly when remaining bed life is more than 2 months, weekly when remaining bed life is between 2 months and 2 weeks, and daily when remaining bed life is less than 2 weeks.

##### 3. Exemptions for Heat Exchange Systems

To correct a disconnect between having a National Pollutant Discharge Elimination System (NPDES) permit that meets certain allowable discharge limits at the discharge point of a facility (*e.g.*, outfall) and being able to adequately identify a leak, we are finalizing, as proposed, the removal of certain exemptions for once-through heat exchange systems to comply with cooling water monitoring requirements.<sup>5</sup> However, as discussed further in the response to comment document for this rulemaking, we are adding back in exemptions originating from 40 CFR 63.104(a)(1), (2), (5), and (6) that were inadvertently removed in the proposed rule.

##### 4. Minor Clarifications and Corrections

We are finalizing all of the revisions that we proposed for clarifying text or correcting typographical errors, grammatical errors, and cross-reference errors. These editorial corrections and clarifications are summarized in Table 11 of the proposal preamble. See 84 FR 69228, December 17, 2019. We are also including several additional minor clarifying edits in the final rule based on comments received during the public comment period. We did not receive many substantive comments on these other amendments in the Miscellaneous Organic Chemical Manufacturing RTR proposal. The comments and our specific responses to these items can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking.

<sup>5</sup> Cooling water from a once-through heat exchange system at a petrochemical plant can be mixed with other sources of water (*e.g.*, cooling water used in once-through heat exchange systems in other source categories, stormwater, treated wastewater, etc.) in sewers, trenches, and ponds prior to discharge from the plant. If this point of discharge from the plant is into a “water of the United States,” then the facility is required to have a NPDES permit and to meet certain pollutant discharge limits.

*F. What are the effective and compliance dates of the standards?*

The revisions to the MACT standards being promulgated in this action are effective on August 12, 2020. New affected sources that commenced construction or reconstruction after December 17, 2019 must comply with all of the standards immediately upon the effective date of the standard, or upon startup, whichever is later.

Existing sources and new affected sources that commenced construction or reconstruction after April 4, 2002, and on or before December 17, 2019, must comply with the amended standards according to the following compliance schedules, with two exceptions: (1) We are revising the General Provisions applicability table (Table 12 to 40 CFR part 63, subpart FFFF) to clarify that for all affected sources, the SSM exemptions contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1) do not apply given the Court vacatur in *Sierra Club v. EPA*, 551 F. 3d 1019 (D.C. Cir. 2008); and (2) electronic reporting of performance test reports and performance evaluations are required, as proposed, upon startup or no later than 60 days after the effective date of the final rule, whichever is later.

- Upon initial startup or on August 12, 2023, whichever is later, for the following amendments: (1) The amendments specified in 40 CFR 63.2445(g), which include all amendments finalized under CAA sections 112(d)(2) and (3) and the heat exchange systems amendments finalized under CAA section 112(d)(6); (2) the amendments related to SSM at 40 CFR 63.2420(e)(4) and 63.2525(j); and (3) the amendments related to electronic reporting of flare management plans at 40 CFR 63.2450(e)(5)(iii) and compliance reports.

- Upon initial startup or on August 12, 2021, whichever is later, for the amendments specified in 40 CFR 63.2445(h), which include the amendments finalized under CAA section 112(d)(6) for equipment leaks (*i.e.*, pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source).

- Upon initial startup or on August 12, 2022, whichever is later, for the amendments specified in 40 CFR 63.2445(i), which include amendments finalized under CAA section 112(f) for process vents, storage tanks, and equipment that are in ethylene oxide service.

Except for the compliance schedule for the SSM exemptions contained in 40 CFR 63.6(f)(1) and (h)(1) as previously described in this section of the

preamble, these compliance schedules have not changed from proposal. However, we are correcting a typographical error to include the word “on” in the phrase “upon initial startup or on” of each schedule. We provide a summary in this section of our rationale for the compliance schedule being finalized for existing sources and new affected sources that commenced construction or reconstruction after April 4, 2002, and on or before December 17, 2019. Refer to section IV.F of the proposal preamble (84 FR 69182, December 17, 2019) for additional detail regarding our rationale for the compliance schedules being finalized, with the exception of the compliance schedule for the amendments finalized under CAA section 112(d)(6) for equipment leaks, which is discussed below. We received comments both in support of and in opposition to the proposed compliance schedules. Most commenters generally supported the proposed compliance schedules and said that owners or operators would need a significant period of time to comply with the proposed revisions. Only one commenter objected to the proposed compliance schedules, and primarily argued against the proposed 2-year compliance delay for the amendments made under CAA section 112(f) (for process vents, storage tanks, and equipment that are in ethylene oxide service). Summaries of these comments and the EPA’s responses can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking.

CAA section 112(i) provides that the compliance date shall be as expeditious as practicable, but no later than 3 years after the effective date of the standard. In determining what compliance period is as expeditious as practicable, we consider the amount of time needed to plan and construct projects and change operating procedures. For all amendments being finalized under CAA sections 112(d)(2) and (3), the heat exchange systems amendments being finalized under CAA section 112(d)(6), the amendments related to SSM (except for the SSM exemptions contained in 40 CFR 63.6(f)(1) and (h)(1) as previously described in this section of the preamble), and electronic reporting of flare management plans and compliance reports, we determined that sources will require up to 3 years after August 12, 2020 to comply with the requirements for the following reasons:

- The operating and monitoring requirements for flares being finalized

under CAA sections 112(d)(2) and (3) will require the installation of new flare monitoring equipment and likely a new control system to monitor and adjust assist gas addition rates, which will require the flare to be taken out of service and may require a significant portion of the MCPU to be shutdown.

- The work practice standards for atmospheric PRDs in organic HAP service being finalized under CAA sections 112(d)(2) and (3) will necessitate sources to identify the most appropriate preventive measures or control approach; design, install, and test the system; install necessary process instrumentation and safety systems; and may need to time installations with equipment shutdown or maintenance outages.

- The vent control requirements for bypasses being finalized under CAA sections 112(d)(2) and (3) will require the addition of piping and potentially new controls, which will likely be routed to the flare, such that these bypass modifications will need to be coordinated with the installation of the new monitoring equipment for the flares.

- The heat exchange system amendments being finalized under CAA section 112(d)(6) will require engineering evaluations, solicitation and review of vendor quotes, contracting and installation of monitoring equipment, operator training, and updating standard operating procedures.

- The removal of the exemptions from the requirements to meet the standard during SSM periods and the addition of electronic reporting will necessitate reading and understanding these new requirements, evaluation of operations to ensure that they can meet the standards during periods of startup and shutdown, making necessary adjustments to standard operating procedures, and converting reporting mechanisms to install necessary hardware and software. In sum, considering the timeframe needed to come into compliance with all of the removed exemptions in this final rule (which in certain cases, will require installation of complex equipment and system changes for flares), the EPA considers a period of 3 years after the effective date of the final rule to be the most expeditious compliance period practicable.

For the equipment leak amendments being finalized under CAA section 112(d)(6), for pumps in light liquid service (in an MCPU that has no continuous process vents and is part of an existing source), we determined that sources will require up to 1 year after August 12, 2020 because, while the

change to lower the leak definition can be implemented relatively quickly as it requires no additional equipment, it will still require changes to a facilities monitoring program and coordination in monitoring schedules, changes to recordkeeping activities and electronic databases, and changes to reporting forms.

For all amendments being finalized under CAA section 112(f) for process vents in ethylene oxide service, storage tanks in ethylene oxide service, and equipment in ethylene oxide service, we determined that sources will require up to 2 years after August 12, 2020 to comply with the requirements to allow time to plan, purchase, and install equipment for ethylene oxide control. For example, for process vents, if the affected source cannot demonstrate 99.9-percent control of ethylene oxide emissions or reduce ethylene oxide emissions to less than 1 ppmv (from each process vent) or 5 lb/yr (for all combined process vents), then a new control system will need to be installed. Sufficient time will be needed to

properly engineer the project, obtain capital authorization and funding, procure the equipment, construct and start-up the equipment, prepare for the initial performance test, set up new software, and develop operating procedures.

**IV. What is the rationale for our final decisions and amendments for the Miscellaneous Organic Chemical Manufacturing source category?**

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

*A. Residual Risk Review for the Miscellaneous Organic Chemical Manufacturing Source Category*

1. What did we propose pursuant to CAA section 112(f) for the Miscellaneous Organic Chemical Manufacturing source category?

Pursuant to CAA section 112(f), the EPA conducted a residual risk review and presented the results of this review, along with our proposed decisions regarding risk acceptability and ample margin of safety, in the December 17, 2019, proposed rule for 40 CFR part 63, subpart FFFF (84 FR 69182). The results of the risk assessment for the proposal are presented briefly in Table 2 of this preamble. More detail is in the residual risk technical support document, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2019 Risk and Technology Review Proposed Rule*, which is available in the docket for this rulemaking (see Docket Item No. EPA–HQ–OAR–2018–0746–0011).

**TABLE 2—MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING SOURCE CATEGORY RISK ASSESSMENT RESULTS IN PROPOSAL**

Number of facilities <sup>1</sup>	Maximum individual cancer risk (in 1 million) <sup>2</sup>	Estimated population at increased risk of cancer <sup>2</sup>		Estimated annual cancer incidence (cases per year) <sup>2</sup>	Maximum chronic noncancer TOSHI <sup>2</sup>	Maximum screening acute noncancer HQ
		>100-in-1 million	≥1-in-1 million			
194 .....	2,000	18,000	2,900,000	0.4	1	HQ <sub>REL</sub> = 6 (acrolein).

<sup>1</sup> Number of facilities evaluated in the risk analysis.

<sup>2</sup> Maximum individual excess lifetime cancer risk due to HAP emissions from the source category.

<sup>3</sup> Actual emissions equal allowable emissions; therefore, actual risks equal allowable risks.

The results of the proposed chronic baseline inhalation cancer risk assessment at proposal indicated that, based on estimates of current actual and allowable emissions, the MIR posed by the source category was 2,000-in-1 million driven by ethylene oxide emissions from storage tanks (75 percent), equipment leaks (15 percent), and process vents (8 percent). At proposal, the total estimated cancer incidence from this source category was estimated to be 0.4 excess cancer cases per year, or one case in every 2.5 years. Approximately 2.9 million people were estimated to have cancer risks above 1-in-1 million from HAP emitted from the facilities in this source category. At proposal, the estimated maximum chronic noncancer target organ-specific hazard index (TOSHI) for the source category was 1, indicating low likelihood of adverse noncancer effects from long-term inhalation exposures.

As shown in Table 2 of this preamble, the worst-case acute hazard quotient (HQ) (based on the reference exposure level (REL)) at proposal was 6 based on the REL for acrolein (the next highest dose-response value for acrolein, the acute exposure guideline level–1 (AEG1–1), results in an HQ of 0.2). There were 11 additional instances of acute HQs greater than 1 from the source category. In addition, at proposal, the multipathway risk screening assessment resulted in a maximum Tier 2 cancer screening value (SV) of 10 for polycyclic organic matter (POM) for the farmer scenario. The Tier 2 SVs for all other HAP known to be persistent and bio-accumulative in the environment (PB–HAP) emitted from the source category (mercury compounds, cadmium compounds, and arsenic compounds) were less than 1. The Tier 2 cancer SV for POM means that the maximum cancer risk from exposure to POM emissions through

ingestion of farm products is less than 10-in-1 million. At proposal, no site-specific assessment using TRIM.FaTE (which incorporates AERMOD deposition, enhanced soil/water run-off calculations, and model boundary identification) or Tier 3 screening assessment was deemed necessary due to the conservative nature of the Tier 2 screen and the hypothetical construct of the farmer scenario. Also, at proposal, the highest annual average lead concentration of 0.0006 micrograms per cubic meter was well below the National Ambient Air Quality Standards for lead, indicating low potential for multipathway risk of concern due to lead emissions.

At proposal, the maximum lifetime individual cancer risk posed by the 194 modeled facilities, based on whole facility emissions, was 3,000-in-1 million, with ethylene oxide emissions from fugitive emissions and flares from the Synthetic Organic Chemical

Manufacturing, Polyether Polyols Production, and Miscellaneous Organic Chemical Manufacturing source categories driving the risk. Regarding the noncancer risk assessment, the maximum chronic noncancer hazard index (HI) posed by whole facility emissions was estimated to be 7 (for the respiratory system as the target organ), driven by emissions of chlorine and methyl bromide from non-source category sources identified as brominated organic manufacturing.

We weighed all health risk factors, including those shown in Table 2 of this preamble, in our risk acceptability determination and proposed that the risks posed by this source category under the current MACT provisions are unacceptable (section IV.C of the proposal preamble, 84 FR 69182, December 17, 2019). At proposal, we identified ethylene oxide as the driver of the unacceptable risk and evaluated several options to control ethylene oxide emissions from (1) process vents, (2) storage tanks, and (3) equipment “in ethylene oxide service.” For process vents, we proposed to define “in ethylene oxide service” to mean that each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled, undiluted ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). For storage tanks of any capacity and vapor pressure, we proposed to define “in ethylene oxide service” to mean that the concentration of ethylene oxide of the stored liquid is greater than or equal to 1 ppmw. We proposed that the exemptions for “vessels storing organic liquids that contain HAP only as impurities” and “pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere” listed in the definition of “storage tank” at 40 CFR 63.2550(i) do not apply for storage tanks in ethylene oxide service. For the ethylene oxide equipment leak provisions, we proposed to define “in ethylene oxide service” to mean any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide.

To reduce risks from process vents in ethylene oxide service, we proposed requirements at 40 CFR 63.2493 to reduce emissions of ethylene oxide by either (1) venting emissions through a closed-vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight, to a concentration less than 1 ppmv for each process vent, or to less than 5 lb/

yr for all combined process vents; or (2) venting emissions through a closed-vent system to a flare meeting the flare operating requirements discussed in section IV.A.1 of the proposal preamble (84 FR 69182, December 17, 2019).

To reduce risks from storage tanks in ethylene oxide service, we proposed a requirement at 40 CFR 63.2493 to reduce emissions of ethylene oxide by either (1) venting emissions through a closed-vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight or to a concentration less than 1 ppmv for each storage tank vent; or (2) venting emissions through a closed-vent system to a flare meeting the flare operating requirements discussed in section IV.A.1 of the proposal preamble (84 FR 69182, December 17, 2019).

To reduce risks from equipment leaks in ethylene oxide service, we co-proposed two control options at 40 CFR 63.2493 (see Table 6 of the proposal preamble, 84 FR 69182, December 17, 2019). In equipment leak co-proposed Control Option 1, we proposed that all light liquid pumps in ethylene oxide service be monitored monthly at a leak definition of 1,000 ppm, and when a leak is detected, it be repaired as soon as practicable, but not later than 15 calendar days after it is detected. Additionally, under co-proposed Control Option 1, we proposed that the leak repair exemption available for pumps at 40 CFR 63.1026(b)(3), 40 CFR 63.163(c)(3), and 40 CFR 65.107(b)(3) would not apply to equipment in ethylene oxide service. Also, as part of co-proposed Control Option 1, we proposed that all gas/vapor and light liquid connectors in ethylene oxide service be monitored annually at a leak definition of 500 ppm, and when a leak is detected, it be repaired as soon as practicable, but not later than 15 calendar days after it is detected. In equipment leak co-proposed Control Option 2, we proposed that more stringent equipment leak standards would apply to two facilities with a MIR greater than 100-in-1 million (*i.e.*, Lanxess Corporation and Huntsman Performance). For these two facilities, at proposal, light liquid pumps in ethylene oxide service would be required to be leakless (*i.e.*, have zero emissions) and monitored annually to verify there are no emissions; and gas and light liquid valves in ethylene oxide service would be required to either be leakless and monitored annually or not be leakless and be monitored quarterly. For these two facilities, at proposal, light liquid pumps and gas and light liquid valves in ethylene oxide service would be considered leaking if an instrument

reading above background is found; and connectors in ethylene oxide service would be monitored monthly at a leak definition of 100 ppm. We proposed that when a leak is detected, it be repaired as soon as practicable, but not later than 15 calendar days after it is detected, and a first attempt at repair be made no later than 5 calendar days after the leak is detected. As part of co-proposed Control Option 2, we proposed all other facilities with MON equipment in ethylene oxide service would be subject to the standards previously described in equipment leak co-proposed Control Option 1.

After implementation of the proposed controls for process vents and storage tanks at MON facilities emitting ethylene oxide, as well as implementation of either of the co-proposed control options for equipment leaks, we proposed that the resulting risks would be acceptable for this source category. We also acknowledged at proposal that estimated post-control risks would be greater than 100-in-1 million (*i.e.*, 200- to 300-in-1 million) and determined that, due to the inherent health protective nature of our risk assessment methods and certain uncertainties,<sup>6</sup> the proposed risk assessment is more likely to overestimate rather than underestimate the risks (see section IV.C.3 of the proposal preamble, 84 FR 69182, December 17, 2019). In our proposal, we presented the risk impacts using health risk measures and information, including the MIR, cancer incidence, population exposed to cancer risks greater than 100-in-1 million, and associated uncertainty in emissions estimates after incremental application of the proposed options to control ethylene oxide emissions from (1) process vents, (2) storage tanks, and (3) equipment in ethylene oxide service (see Table 7 of the proposal preamble, 84 FR 69182, December 17, 2019). At proposal, we determined application of the ethylene oxide-specific controls for process vents and storage tanks would reduce ethylene oxide emissions by an estimated 89 percent for the source category, and the estimated MIR would be reduced from 2,000-in-1 million to 400-in-1 million at Lanxess Corporation, and the next highest estimated MIR would be 300-in-1 million at Huntsman Performance. In both cases, we determined that the remaining risk

<sup>6</sup> Uncertainties regarding the equipment leak emissions, the uncertainties inherent in all risk assessments (*i.e.*, the emissions dataset, dispersion modeling, exposure estimates, and dose-response relationships), and the EPA’s use of the 2016 unit risk estimate (URE) for ethylene oxide (which is developed to be health protective).

would be primarily from equipment leak emissions of ethylene oxide. Subsequent application of equipment leak co-proposed Control Option 1 would further reduce ethylene oxide emissions by 4 percent, for a total estimated 93-percent reduction in ethylene oxide emissions for the source category, with the MIR at Lanxess Corporation being further reduced to 200-in-1 million and the MIR at Huntsman Performance remaining at 300-in-1 million. Alternatively, subsequent application of equipment leak co-proposed Control Option 2 (instead of Control Option 1) would reduce ethylene oxide emissions by a total estimated 94-percent for the source category, with the MIR at Lanxess Corporation being further reduced to 100-in-1 million and the MIR at Huntsman Performance being reduced to 200-in-1 million.

At proposal, we requested comments on the use of the 2016 updated URE<sup>7</sup> for ethylene oxide for regulatory purposes beyond those already received for the Hydrochloric Acid (HCl) Production RTR proposed rule (84 FR 1584–1597, February 4, 2019), as well as comments on the use of an alternative URE for ethylene oxide in the final rule for this source category. We also solicited comment on which of the two ethylene oxide equipment leak co-proposed control options should be implemented in the final rulemaking in order to ensure that risks from the source category are acceptable.

We then considered whether the existing MACT standards provide an ample margin of safety to protect public health and whether, taking into consideration costs, energy, safety, and other relevant factors, and whether additional standards are required to prevent an adverse environmental effect. To determine whether the rule provides an ample margin of safety, we considered the requirements that we proposed to achieve acceptable risks. We also considered implementing

<sup>7</sup> The URE is an upper-bound estimate of an individual's incremental risk of contracting cancer over a lifetime of exposure to a concentration of 1 microgram of the pollutant per cubic meter of air. For residual risk assessments, we generally use UREs from the EPA's Integrated Risk Information System (IRIS). For carcinogenic pollutants without IRIS values, we look to other reputable sources of cancer dose-response values, where available. In cases where new, scientifically credible dose-response values have been developed in a manner consistent with EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use such dose-response values in place of, or in addition to, other values, if appropriate. The pollutant-specific dose-response values used to estimate cancer health risk are available at <https://www.epa.gov/fera/dose-response-assessment-assessing-health-risks-associated-exposure-hazardous-air-pollutants>.

equipment leak co-proposed Control Option 2, which would require that the two facilities with estimated cancer risks greater than 100-in-1 million comply with more stringent standards. In addition, we considered expanding the applicability of equipment leak co-proposed Control Option 2 so that the more stringent controls would apply to all facilities with equipment in ethylene oxide service, regardless of estimated cancer risks. Finally, we considered the options identified in the technology review (*i.e.*, controls for equipment leaks for MON equipment not in ethylene oxide service and heat exchange systems). In considering whether the standards should be tightened to provide an ample margin of safety to protect public health, we considered the same risk factors that we considered for our acceptability determination and also examined the costs, technological feasibility, and other relevant factors related to emissions control options that might reduce risk associated with emissions from the source category. Based on these considerations, we proposed that the requirements that we proposed to achieve acceptable risks would also provide an ample margin of safety to protect public health (section IV.C.4 of the proposal preamble, 84 FR 69182, December 17, 2019). We also solicited comment on which of the available control options should be applied in order to provide an ample margin of safety to protect public health.

2. How did the risk review change for the Miscellaneous Organic Chemical Manufacturing source category?

a. Miscellaneous Organic Chemical Manufacturing Source Category Risk Assessment

As part of the final risk assessment, the EPA reanalyzed risks using emissions inventory updates that were received from a CAA section 114 request issued to the highest risk facility, and additional information received from the two highest risk facilities during the public comment period. These updates were primarily reductions to emissions of ethylene oxide and included revised actual emissions for two facilities and allowable emissions for one facility. The revised emissions used to reanalyze risks are available in the docket for this rulemaking (see section IV.A.3.b of this preamble and Appendix 1 of the *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, available

in the docket for this rulemaking, for more detail about these revised emissions).

Based on the revised actual emission estimates, the results of the chronic inhalation cancer risk from the revised risk assessment indicate that the maximum lifetime individual cancer risk posed by the 194 facilities could be as high as 400-in-1 million, with ethylene oxide from process vents and equipment leaks as the major contributors to the risk. Specifically, the revised baseline cancer risk is reduced to 400-in-1 million for the Lanxess facility, and to less than 100-in-1 million for Huntsman Performance. The total estimated cancer incidence from the revised risk assessment is 0.1 excess cancer cases per year, or one excess case in every 10 years. Of the approximately 89,000,000 people that live within 50 kilometers (km) of the 194 facilities, 1,700,000 people were estimated to have cancer risks greater than or equal to 1-in-1 million from HAP emitted from the facilities in this source category. Approximately 46,000 people were estimated to have cancer risks greater than or equal to 10-in-1 million, and 1,200 people were estimated to have cancer risks greater than or equal to 100-in-1 million. Of those 1,200 people, approximately 860 are estimated to have cancer risks greater than 100-in-1 million (Table 3 of this preamble).

The estimated maximum chronic noncancer TOSHI for the source category remained unchanged from the proposal at 1, indicating low likelihood of adverse noncancer effects from long-term inhalation exposures. Additionally, the worst-case acute HQ (based on the REL) remained unchanged from proposal (6 based on the REL for acrolein and the next highest dose-response value for acrolein, the AEGL-1, results in an HQ of 0.2). Similarly, the multipathway risk screening assessment remained unchanged from proposal and resulted in a maximum Tier 2 cancer SV of 10 for POM for the farmer scenario. The Tier 2 SVs for all other PB-HAP emitted from the source category (mercury compounds, cadmium compounds, and arsenic compounds) were less than 1.

Whole facility risks also did not change from those at proposal based on revised emission estimates. The maximum lifetime individual cancer risk based on whole facility emissions was 3,000-in-1 million driven by ethylene oxide emissions from fugitive emissions and flares from the Synthetic Organic Chemical Manufacturing, Polyether Polyols Production, and Miscellaneous Organic Chemical Manufacturing source categories. The

maximum chronic noncancer HI posed by whole facility emissions was estimated to be 7 (for the respiratory system as the target organ), driven by emissions of chlorine and methyl bromide from non-source category sources identified as brominated organic manufacturing.

Based on revised allowable emission estimates, the maximum lifetime

individual cancer risk could be as high as 800-in-1 million, with ethylene oxide from storage tanks, process vents, and equipment leaks driving the risk. The total estimated cancer incidence is 0.2 excess cancer cases per year, or 1 excess case in every 5 years. Approximately 2,000,000 people were estimated to have cancer risks greater than or equal to 1-in-1 million from allowable emissions,

approximately 170,000 were estimated to have cancer risks greater than or equal to 10-in-1 million, and 4,200 people were estimated to have cancer risks greater than or equal to 100-in-1 million. Of those 4,200 people, approximately 1,700 are estimated to have cancer risks greater than 100-in-1 million (Table 3 of this preamble).

TABLE 3—MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING SOURCE CATEGORY RISK ASSESSMENT RESULTS BASED ON REVISED EMISSIONS IN FINAL RULE

Number of facilities <sup>1</sup>	Maximum individual cancer risk (in 1 million) <sup>2</sup>	Estimated population at increased risk of cancer <sup>2</sup>		Estimated annual cancer incidence (cases per year) <sup>2</sup>	Maximum chronic noncancer TOSHI <sup>2</sup>	Maximum screening acute noncancer HQ
		>100-in-1 million	≥1-in-1 million			
<b>Actual Emissions</b>						
194 .....	400	860	1,700,000	0.1	1	HQ <sub>REL</sub> = 6 (acrolein).
<b>Allowable Emissions</b>						
194 .....	800	1,700	2,000,000	0.2	1	

<sup>1</sup> Number of facilities evaluated in the risk analysis.

<sup>2</sup> Maximum individual excess lifetime cancer risk due to HAP emissions from the source category.

<sup>3</sup> Actual emissions equal allowable emissions with the exception of one facility, where additional information was available.

Finally, risks were estimated after application of the controls finalized in this rulemaking for storage tanks, process vents, and equipment in ethylene oxide service, in addition to controls that apply to all HAP and were identified during the technology review (controls for heat exchangers and equipment leaks for MON equipment not in ethylene oxide service). Based on these controls, we estimated that the baseline cancer MIR of 400-in-1 million would be reduced to 200-in-1 million for actual emissions, with ethylene oxide from equipment leaks driving the risk. There would be 107 people estimated to have a cancer risk greater

than 100-in-1 million, down from 860 people in the baseline scenario. There is an estimated reduction in cancer incidence to 0.09 excess cancer cases per year (or one excess case every 11 years), down from 0.1 excess cancer cases per year (or one excess cancer case every 10 years) in the baseline scenario. In addition, the number of people estimated to have a cancer risk greater than or equal to 1-in-1 million would be reduced from 1,700,000 to 1,400,000 (Table 4 of this preamble).

For allowable emissions, we estimated that the baseline cancer MIR of 800-in-1 million would be reduced to 200-in-1 million, with ethylene oxide

from equipment leaks driving the risk. There would be 115 people estimated to have a cancer risk greater than 100-in-1 million, down from 1,700 people in the baseline scenario. There is an estimated reduction in cancer incidence to 0.09 excess cancer cases per year (or one excess case every 11 years), down from 0.2 excess cancer cases per year (or one excess cancer case every 5 years) in the baseline scenario. In addition, the number of people estimated to have a cancer risk greater than or equal to 1-in-1 million would be reduced from 2,000,000 to 1,400,000 (Table 4 of this preamble).

TABLE 4—BASELINE AND POST-CONTROL RISK SUMMARY FOR THE MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING SOURCE CATEGORY BASED ON REVISED EMISSIONS IN FINAL RULE

	Inhalation cancer risk		Population cancer risk		
	Maximum individual risk (in 1 million)	Risk driver	Cancer incidence (cases per year)	>100-in-1 million	≥1-in-1 million
<b>Actual Emissions</b>					
Baseline Risk .....	400	ethylene oxide .....	0.1	860	1,700,000
Post-control Risk .....	200	ethylene oxide .....	0.09	107	1,400,000
<b>Allowable emissions</b>					
Baseline Risk .....	800	ethylene oxide .....	0.2	1,700	2,000,000
Post-control Risk .....	200	ethylene oxide .....	0.09	115	1,400,000

We continue to find that the revised risks prior to control are unacceptable, and we are revising the final NESHAP for the Miscellaneous Organic Chemical Manufacturing source category pursuant to CAA section 112(f)(2) on the basis that risks are unacceptable. However, as discussed in sections IV.A.3 and IV.A.4 of this preamble, we find that, after implementation of the controls finalized in this rulemaking, the resulting risks would be acceptable for this source category and achieve an ample margin of safety.

Additional details of the reanalyzed risks can be found in the *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, available in the docket for this rulemaking.

#### b. Rule Changes

Based on comments received on the proposed rulemaking, we are revising the proposed definition of “in ethylene oxide service” for process vents by removing “undiluted” from mass-based criteria and removing the phrase “anywhere in the process.” In the final rule, a process vent in ethylene oxide service means each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled, ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). In addition, based on comments received on the proposed rulemaking, we are revising the definitions of “batch process vent” and “continuous process vent” in the final rule to clarify that (1) the existing 50 ppmv HAP and 200 lb/yr uncontrolled HAP emission cut-offs do not apply to batch process vents in ethylene oxide service; and (2) the existing 0.005 weight percent total organic HAP cut-off in 40 CFR 63.107(d) does not apply to continuous process vents in ethylene oxide service.

Based on comments received on the proposed rulemaking, we are also revising the proposed definition of “in ethylene oxide service” for storage tanks by revising the concentration of ethylene oxide criteria to a 0.1 percent by weight threshold. In the final rule, a storage tank in ethylene oxide service means a storage tank of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide.

For equipment leaks in ethylene oxide service, we are finalizing the co-proposed equipment leak “Control

Option 1.” We are not promulgating final amendments for co-proposed equipment leak “Control Option 2.”

Finally, based on comments received on the proposed rulemaking, we are also revising some of the continuous monitoring requirements for operating parameters for scrubbers used to control emissions from process vents in ethylene oxide service or storage tanks in ethylene oxide service. In the final rule, we are allowing the limits for the pressure drop across the scrubber and the liquid feed pressure to the scrubber to be based on the manufacturer’s recommendations or engineering analysis instead of on the performance test. Additionally, we are changing the continuous compliance requirements for the operating parameters, such that compliance with the operating parameter limits is determined on an hourly average basis instead of an instantaneous basis.

3. What key comments did we receive on the risk review, and what are our responses?

This section provides comment summaries and responses for the key comments received regarding the ethylene oxide IRIS URE, including those received for the HCl Production RTR proposed rule (84 FR 1584–1597, February 4, 2019), and our risk assessment for the Miscellaneous Organic Chemical Manufacturing source category, our proposed definition of “in ethylene oxide service,” proposed requirements for storage tanks and process vents in ethylene oxide service, and proposed requirements for equipment leaks in ethylene oxide service. We received comments in support of and against the proposed residual risk review, the IRIS URE used in the review, the American Chemistry Council’s (ACC’s) request for correction under the Information Quality Act asking that the “NATA risk estimates for E.O.<sup>8</sup> should be withdrawn and corrected to reflect scientifically supportable risk values,” and our determination that additional controls were warranted under CAA section 112(f)(2) for the Miscellaneous Organic Chemical Manufacturing source category. Other comments on these issues, as well as on additional issues regarding the residual risk review and the EPA’s proposed changes based on the residual risk review, can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical*

<sup>8</sup> In this instance, “E.O.” refers to “ethylene oxide.”

*Manufacturing*, available in the docket for this rulemaking.

#### a. Ethylene Oxide IRIS URE

In the MON RTR proposed rule (84 FR 69182, December 17, 2019), as well as the HCl Production RTR proposed rule (84 FR 1584, February 4, 2019), we requested comment on the use of the updated ethylene oxide URE for regulatory purposes. Also, in the proposed rulemaking for the Miscellaneous Organic Chemical Manufacturing source category, we noted the ACC’s request for correction under the Information Quality Act asking that the “NATA risk estimates for E.O. should be withdrawn and corrected to reflect scientifically supportable risk values.” Several commenters provided comments on these two topic areas as summarized below:

*Comment:* We received extensive comments on use of the EPA ethylene oxide URE. Some commenters were in support of the continued use of the EPA URE and other commenters recommended changes to aspects of the EPA URE or recommended use of an alternative to the EPA URE. Many of the commenters recommending changes to the EPA URE focused on aspects of dose-response modeling that could affect the value of the EPA URE, including model selection, inclusion of breast cancer data, cohort selection, and historical exposure estimates. Other comments evaluated the biological plausibility of the EPA URE, including considerations of endogenous and ambient background ethylene oxide levels and mortality predictions. In some cases, commenters submitted analyses of existing data, including recent publications (e.g., Marsh et al. 2019; Bogen et al. 2019; Kirman and Hays 2017). In addition, the Texas Commission on Environmental Quality (TCEQ) submitted their draft cancer dose-response assessment for ethylene oxide to the EPA for consideration as an alternative to the EPA URE for ethylene oxide.

*Response:* A number of comments received on aspects of dose-response modeling largely touch on matters that were identified and discussed as part of the peer and public review processes for the EPA IRIS ethylene oxide Assessment, and the Agency considered those comments in the development of the final IRIS ethylene oxide Assessment.<sup>9</sup> The prior comments and responses are documented in the

<sup>9</sup> *Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide (EtO)*, EPA/635/R-16/350fa. Available at [https://cfpub.epa.gov/ncea/iris\\_drafts/recordisplay.cfm?deid=329730](https://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=329730).

Appendices of the EPA 2016 IRIS ethylene oxide assessment<sup>10</sup> and are therefore addressed here by referencing the existing IRIS responses. For some of these topics, additional comments were submitted that either augment previous comments or address specific details of the final IRIS dose-response model that were not addressed during the peer-review process. For example, additional comments were submitted on pre-1978 exposure estimates and statistical evaluation of the dose-response model selected for lymphoid cancer. Additional detailed responses to these topics are provided in the response to comment document for this rulemaking.

Several public comments referred to recent analyses of existing data, including publications that focus on different aspects of ethylene oxide assessment such as weight of evidence for breast cancer (Marsh et al. 2019), estimates of ethylene oxide levels produced in our bodies (Kirman and Hays 2017), and evaluation of historical occupational exposure estimates (Bogen et al. 2019). As we detail in the response to comment document, consideration of these individual analyses did not prompt the Agency to pursue reassessment of the EPA's IRIS ethylene oxide Assessment for purposes of this rulemaking. For example, Marsh et al. analyzed breast cancer mortality and focused on comparing cancers seen in occupational groups with national or regional average rates; whereas, the EPA has generally focused on studies of breast cancer incidence since many women survive breast cancer.<sup>11</sup> With regard to the amount of ethylene oxide produced within the human body, Kirman and Hays did not include any direct measurements of endogenous ethylene oxide levels; however, they did measure a particular by-product (an adduct—chemical reaction product—with the protein hemoglobin) that could be associated with total ambient exposure (including both endogenous and ambient background) among non-occupationally exposed individuals. While studies of the hemoglobin adduct found it to be a useful marker for high level occupational exposures to ethylene oxide, there are many uncertainties in attempting to use this product as a direct measure of ambient background or endogenous levels of ethylene oxide in the body. Further,

<sup>10</sup> *Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide (EtO) Appendices*, EPA/635/R-16/350fb. Available at [https://cfpub.epa.gov/ncea/iris\\_drafts/recordisplay.cfm?deid=329730](https://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=329730).

<sup>11</sup> *Guidelines for Carcinogen Risk Assessment*, EPA/630/P-03/001F, 2005. Available at: [https://www.epa.gov/sites/production/files/2013-09/documents/cancer\\_guidelines\\_final\\_3-25-05.pdf](https://www.epa.gov/sites/production/files/2013-09/documents/cancer_guidelines_final_3-25-05.pdf).

because the IRIS URE for ethylene oxide represents the increased cancer risk due to exposure to ethylene oxide emissions above endogenous ethylene oxide and ambient background levels, consideration of the findings of Kirman and Hays or other studies of endogenous or ambient background exposures would not impact the URE. The findings of Bogen et al. are discussed further in the response to comment document for this rulemaking.

Though the TCEQ submitted their draft cancer dose-response assessment for ethylene oxide to the EPA as part of the public comment process, the assessment had not yet undergone peer review, and the TCEQ dose-response value had not yet been finalized by the close of the public comment period for this rulemaking, which closed on March 19, 2020.<sup>12</sup> Therefore, the TCEQ dose-response value could not be considered for this rulemaking.

For these reasons, we have decided to continue to use the EPA URE for ethylene oxide for the risk analyses performed for this final rulemaking. As always, the EPA remains open to new and updated scientific information, as well as new dose response values such as the TCEQ value, as they become available.

*Comment:* Several commenters supported the ACC's request for correction. Other commenters indicated that there was no justification for a correction to the EPA URE for ethylene oxide.

*Response:* In a letter to the ACC dated December 18, 2019, the then-acting Assistant Administrator for Air and Radiation stated that “[b]ecause EPA received comments from the ACC and others on the HCl proposed rule related to use of information in the 2016 EtO IRIS Assessment,” and “given that EPA anticipates receiving additional comments focused on the 2016 EtO IRIS Assessment in the MON RTR rulemaking,” the EPA believed at that time that it was “appropriate to address this [request for correction] as part of the MON RTR rulemaking.”<sup>13</sup> Having

<sup>12</sup> Note that the final TCEQ assessment was issued on May 15, 2020.

<sup>13</sup> See Letter from Anne L. Idsal, acting Assistant Administrator for Air and Radiation to William P. Gullledge, American Chemistry Council (December 18, 2019). Similarly, in the proposed rulemaking, we took note of the fact that, “[g]iven the ACC's Response for Correction,” we had in the earlier HCl Production RTR proposed rule “requested comment on the use of the updated ethylene oxide URE for regulatory purposes.” 84 FR 69218 (December 17, 2019). “Because of the robustness of the comment received and their relevance to this rulemaking,” we said that the Agency would “consider those comments in the final rule for the Miscellaneous Organic Chemical Manufacturing source category.” *Id.*

now reviewed and considered the comments it has received, the EPA has determined that it is appropriate to defer providing a final response to the ACC's request at this time. The EPA is under a court ordered deadline requiring signature of the final MON RTR by May 29, 2020, and we have determined that, given the time available and in light of other resource constraints, completing our consideration of the Information Quality Act request for correction in conjunction with taking final action in this rulemaking is not practicable. Accordingly, in order to ensure that the ACC's request for correction is given the complete attention it warrants, we have determined that it is appropriate to issue this final CAA rule separately from the Agency response to the ACC request. We anticipate taking final action on the Information Quality Act request for correction in the near future.

#### b. MON Risk Assessment

Several commenters provided comments on specific facilities in the EPA risk assessment and submitted additional data for the EPA to use for assessing public health risks. Those comments are as follows:

*Comment:* One commenter contended that the EPA conducted a CAA section 114 data collection effort on the highest risk facility, Lanxess, but did not use the data at proposal, even though the results of the performance testing were received in September 2019. The commenter disagreed with the EPA's decision that any changes received by September 2018 were incorporated into the RTR modeling file, and after September 2018 and before February 2019, only minor changes related to MON applicability of ethylene oxide emissions were incorporated into the RTR modeling file. Commenters stated that the EPA has significantly overestimated the risks posed by the Lanxess facility and that if the EPA used the most recent and best available data, the Lanxess facility would not be classified as a high-risk site. As justification, the commenters provided new stack test data for Lanxess' two process scrubbers and the storage tank scrubber based on performance tests conducted from June 3 to June 20, 2019. The commenters provided that the preliminary results from the performance tests indicate that the total ethylene oxide emissions from the three scrubbers were significantly less than the initial estimate that was used for the risk analysis and proposed rule.<sup>14</sup> Commenters observed that the

<sup>14</sup> Commenter referred to Docket Item No. EPA-HQ-OAR-2018-0746-0022.

risk analysis published at proposal did not include this most recent stack test data.

One commenter also objected to the EPA using a different approach to establish baseline emissions for the Lanxess facility as compared with all other MON facilities and objected to the EPA proposing a more stringent control technology standard specifically for this facility based on incomplete data and a different standard from that which was applied to all other facilities. The commenter reiterated that for the Lanxess facility, the EPA disregarded actual 2014 emissions data for storage tanks and process vents and estimated emissions for fugitives using component counts and emission factors, which the EPA acknowledged likely resulted in emission estimates that were biased high. The commenter provided updated information and requested that the facility emissions, like the other MON facilities, be analyzed based on 2014 actual emissions.

Some commenters requested that the EPA update the emission estimate for the site to reflect a control efficiency of 99.9 percent for the ethylene oxide storage tank scrubber and use 2014 actual emissions data, which would establish a 0.0107 tpy baseline for this scrubber. The commenters further asserted that the EPA chose not to use reported 2014 ethylene oxide emissions associated with the two scrubbers that control emissions from the two process vents in ethylene oxide service and instead calculated potential emission rates using the facility's 2012 title V application, which resulted in a modeling input of almost twice the actual emissions and was not consistent with the method the EPA utilized to review risk for the other MON facilities. The commenters requested that the EPA use the reported values contained in the calendar year 2014 emissions inventory for the two process vent scrubbers to establish the baseline for risk.

Commenters further contested the EPA's approach to estimating fugitive emissions and emissions from equipment leaks; commenters did not agree with estimating fugitive emissions based on potential emissions in lieu of 2014 actual emissions. Further, the commenters requested that the EPA update the equipment leak source parameters to a volume source versus an area source to better represent equipment leak emissions, and to update the risk inputs to use current equipment counts, composition of ethylene oxide in the streams, the emission factors from Table 6 of the EPA's equipment leak evaluation memorandum, *Analysis of Control*

*Options for Equipment Leaks at Processes that use ethylene oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category*, and the facility's actual hours of operation in 2014. The commenters also stated that the facility has no light liquid pumps in ethylene oxide service that would be subject to the proposed pump requirements.

Commenters stated that, using the revised emissions estimates and volume source parameters, they re-ran the EPA's risk model and calculated a baseline risk of 270-in-1 million for the Lanxess facility. The commenter stated that using the revised baseline emissions to estimate post-control emissions would result in significant reductions for either Control Option 1 or 2 and provided revised estimates of post-control emissions based on the updated data. The commenter asserted that when the EPA risk model is rerun for the Lanxess facility utilizing all corrected inputs, the residual risk is 100-in-1 million with implementation of Control Option 1.

*Response:* In light of the additional data and comments received, the EPA has made adjustments to the emissions used in the residual risk assessment in the final rule, and we note that using revised baseline emissions to estimate post-control emissions results in significant reductions for either Control Option 1 or 2. As we acknowledged in the proposal preamble (84 FR 69186, December 17, 2019), although the EPA did not receive the CAA section 114 data from Lanxess in time to be used at proposal, we posted this data publicly to the docket at proposal to provide the public with sufficient time to review the data and provide comments during the comment period. Further, we acknowledged we intended to "use the collected information to assist the Agency in filling data gaps, establishing the baseline emissions and control levels for purposes of the regulatory reviews, identifying the most effective control measures, and estimating the environmental impacts associated with the regulatory options considered and reflected." (84 FR 69186, December 17, 2019). Thus, as has always been our intent, we are revising the residual risk assessment to incorporate the data received in the response to the CAA section 114 request to update Lanxess' emissions in the final rule, which includes updating emissions for the storage tank and process vents to reflect the measured control efficiencies. Additionally, at proposal, the best available data had us assume that "actual" emissions were equal to "allowable" emissions. At final, the data acquired from the CAA section 114

request has allowed us to separately estimate "actual" emissions and "allowable" emissions at Lanxess. Therefore, in the final rule, we present both pre-control and post-control risks for Lanxess considering the range of emissions generated by these two emissions estimations.

Additionally, we are incorporating the updated data for equipment in ethylene oxide service provided during the comment period by Lanxess in the revised risk assessment for the final rule. The updated data include component counts, hours of operation, and percentage of ethylene oxide for each process with equipment in ethylene oxide service. The EPA believes that the updated data represents the best available data because it is more recent and reflects updated component counts and changes made to the process. We considered updating the source parameters for equipment in ethylene oxide service to reflect a volume source as the commenter suggested; however, we ultimately retained the parameters as an area source based on the information already available to the EPA, and after determining such change would have minimal impact on risk. After updating emissions for this facility, the pre-control cancer risks are estimated to be 400-in-1 million (actuals) and 800-in-1 million (allowables). We disagree with the commenter's assertion that pre-control risks are 300-in-1 million based on actual emissions. At proposal and in the commenter's revisions to the modeling file, fugitive ethylene oxide emissions were grouped together and modeled as being released from one location. In their comments, Lanxess provided additional information which made it possible to accurately separate and assign these fugitive ethylene oxide emissions to their actual locations at the facility. In the modeling file for the final rule, we have separated and relocated ethylene oxide fugitive emissions to their proper location, which resulted in a risk higher than what the commenter estimated due to several fugitive areas being in closer proximity to the receptor. Therefore, in the final rule, after considering all updates made to the emissions data for Lanxess, the ethylene oxide emissions at the current level of control (*i.e.*, before the amended controls are applied) are estimated to be approximately 0.64 tpy based on actual emissions and 2.6 tpy based on allowable emissions, compared to 8.8 tpy at proposal. See Appendix 1 of the *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in*

*Support of the 2020 Risk and Technology Review Final Rule*, available in the docket for this rulemaking, for additional information.

After ethylene oxide-specific controls for process vents, storage tanks, and equipment leak Control Option 1 are applied at Lanxess, ethylene oxide emissions are expected to be reduced to 0.15 tpy based on actual emissions and 0.17 tpy based on allowable emissions. Estimated post-control cancer risks are reduced to 200-in-1 million for both actual and allowable emissions estimates. We disagree with the commenter's assertion that post-control risks at Lanxess after applying controls for process vents, storage tanks, and equipment leak Control Option 1 are 100-in-1 million based on actual emissions, since the commenter did not model fugitive emissions from their actual locations as described above. In addition, Lanxess also provided updated component counts in their comments that we used to update the estimated effect that controls would have in reducing ethylene oxide emissions. These new emission reduction estimates indicate that the revised leak detection and repair (LDAR) requirements for light liquid pumps will have less of an effect in reducing ethylene oxide emissions than estimated at proposal, due to new knowledge that there are no light liquid pumps in ethylene oxide service at Lanxess. After ethylene oxide-specific controls for process vents, storage tanks, and equipment leaks Control Option 2 are applied, and using updated emissions data provided during the comment period, estimated post-control cancer risks are reduced to 100-in-1 million (actuals and allowables).

We note that, after the comment period closed, the EPA met with representatives from Lanxess on March 25, 2020, to discuss their comments posted to the docket on February 20, 2020, (see Docket Item No. EPA-HQ-OAR-2018-0746-0069) and ask clarifying questions. Subsequently, Lanxess provided written responses to these questions on April 17, 2020, as well as additional updates to their February comments that included further revisions to emissions data, which would affect equipment leak emissions estimates. This data was not received in time to incorporate into the final risk modeling; however, we recognize that these changes would further reduce estimated ethylene oxide emissions from equipment leaks. Meeting minutes for the March discussion between the EPA and Lanxess, as well as the written responses Lanxess provided to

questions asked at this meeting, can be found in the memorandum, *Meeting Record for March 25, 2020, Meeting Between the U.S. EPA and Representatives of Lanxess Corporation*, in the docket for this rulemaking.

*Comment:* Several commenters provided input on the emissions estimates used in the risk modeling for the Huntsman Performance facility in Conroe, Texas. One commenter stated that the EPA's emissions estimates for the facility from the 2014 National Emissions Inventory (NEI) and the 2014 Toxics Release Inventory (TRI) are not appropriate for use in a risk assessment. The commenter argued that even if the NEI and TRI data were developed with adequate specificity to support risk modeling, the data are 6 years old and do not reflect current operations. The commenter provided data for the Huntsman Performance facility that they claimed more accurately reflect ethylene oxide emissions from equipment leaks, based on a detailed analysis using direct quarterly LDAR monitoring data for each relevant component. Another commenter recommended that the EPA use the information provided in Huntsman Performance's comments in the final rule because the new data more accurately reflect ethylene oxide emissions at the Huntsman Performance facility. Commenters stressed that the submitted data significantly improve on the 2014 data because they reflect physical and operating changes made since 2014, such as addition and removal of relevant equipment. One commenter explained that the new data submitted remain highly conservative and are expected to overstate actual ethylene oxide emissions, largely because the commenter's data analysis does not assume that results below the detection limit are equal to "zero" but are present at the detection limit.

Some commenters stated that the EPA's modeling files incorrectly included sources at the Huntsman Performance facility that are not MON-applicable. One commenter asserted that the EPA's risk assessment for the Huntsman Performance facility incorrectly designates certain units with ethylene oxide emissions as being regulated under MON, despite the fact that they are not MON sources. Commenters also stated that the EPA specifically notes that these ethylene oxide equipment leak emissions are not entirely from MON processes; however, the EPA did not have enough information to distinguish between emissions attributed to MON processes versus other processes (e.g., 40 CFR part 63, subparts H and PPP). The commenter specifically identified the

railcar unloading fugitive area and tank farm fugitives as inappropriate to include as MON sources and provided input on why the sources do not meet the definition of MCPU or storage tank or fall within the purview of the MON. The commenter provided a copy of revised modeling they conducted with the updated emissions estimates and removal of units not subject to MON; the commenter's revised modeling results showed that residual risks associated with the Huntsman Performance facility are 40-in-1 million.

*Response:* The EPA has reviewed the updated equipment leak emissions data provided during the comment period by Huntsman Performance in Conroe, Texas, the second highest risk-driving facility that was identified at proposal. We agree with the information provided that two emission units were incorrectly modeled as being subject to MON, when in fact, they are subject to other standards. As such, in the final rule these units are modeled at the whole facility-level only. We have also updated Huntsman Performance's ethylene oxide equipment leak emissions using the updated emissions data provided by the facility, consistent with the EPA's standard practice of using the best available data. The EPA believes that the updated data because it is more recent (i.e., 2019), is based on actual emissions measurements, reflects recent physical and operating changes made to the process since the 2014 NEI emissions were reported, and conservatively considers results below the detection limit as being present at the detection limit. After considering all updates made to the emissions data for Huntsman Performance, the ethylene oxide emissions before controls are applied are estimated to be approximately 0.03 tpy based on actual and allowable emissions, compared to roughly 0.26 tpy estimated at proposal. The pre-control cancer risks are estimated to be 20-in-1 million. After ethylene oxide-specific controls are applied, the estimated post-control cancer risks are also 20-in-1 million. Risks are not reduced with the amendments because (1) storage tank and process vent controls have no effect since these are not sources of ethylene oxide emissions at this facility, and (2) equipment leak Control Option 1 has no effect because this facility already meets the LDAR requirements this option requires.

We note that, after the comment period closed, the EPA met with representatives from Huntsman Performance on March 12, 2020, to

discuss their comments posted to the docket on February 20, 2020, (see Docket Item No. EPA-HQ-OAR-2018-0746-0073) and ask clarifying questions. Subsequently, Huntsman Performance provided written responses to these questions on April 27, 2020. The information received in their April response further supports their prior assertion from their February 2020 comments that the two units modeled as being subject to MON at proposal should instead be modeled only at the whole facility level and provides additional information related to wastewater operations at the facility. No changes to facility emissions or the risk assessment were made as a result of the April 2020 responses, beyond the changes already made based on their comments submitted in February 2020. Meeting minutes for the referenced discussion between the EPA and Huntsman Performance, as well as the written responses Huntsman Performance provided in April 2020 to the questions asked at this meeting, can be found in the memorandum, *Meeting Record for March 12, 2020, Meeting Between the U.S. EPA and Representatives of Huntsman Performance*, in the docket for this rulemaking.

Several commenters provided comments on the EPA's risk acceptability and ample margin of safety determinations. Those comments are as follows:

*Comment:* Several commenters agreed with the EPA's determination that the proposed emission standards for this source category would achieve an acceptable risk level and protect public health with an ample margin of safety. One commenter in support of the finding stated that the Benzene NESHAP rulemaking expressly notes that "[t]he presumptive level provides a benchmark for judging the acceptability of maximum individual risk ('MIR'), but does not constitute a rigid line for making that determination."<sup>15</sup> The commenter stated that, in the Benzene NESHAP itself, the EPA found MIRs for two categories that exceeded the standard 1-in-10,000 (100-in-1 million) presumptive benchmark acceptable (200-in-1 million for Coke By-Product Recovery Plants and 600-in-1 million for Equipment Leaks) based on uncertainties in the data that suggested risks were overstated. The commenter expressed that this precedent means that the EPA has authority to accept a MIR that is above a 1-in-10 thousand (100-in-1 million) benchmark, and that

scientific uncertainty and the likely overstatement of risks is a reasonable basis for doing so. The commenter stated that, therefore, the EPA should make a similar acceptability determination for the MON RTR rulemaking, given that comparable uncertainties exist with the information and emissions estimates informing the risk modeling.

However, other commenters questioned the justification for proposing a regulation that would still allow a cancer risk of 200- to 300-in-1 million. One commenter stated that failing to set a health-protective emission standard that eliminates unacceptable risk because a risk factor "could be" lower is arbitrary and unlawful under CAA section 112(f)(2). Other commenters said they believed that the 100-in-1 million lifetime cancer risk cannot be considered safe or "acceptable," and multiple commenters recommended that the EPA ensure risks from ethylene oxide exposure are below 100-in-1 million. Two commenters insisted that no level of health risks from HAP can be presumed safe or "acceptable" and that the EPA must reduce risks to the lowest possible level.

Other commenters stated that the EPA must require companies to take steps necessary to prevent all unacceptable health threats and to provide an "ample margin of safety to protect public health." Commenters further argued that the EPA did not establish an "ample margin of safety" between what the EPA considers to be an acceptable level of risk and the current emission limits, taking into account the nature of the chemicals being emitted and the uncertainties in the EPA's risk assessments, as required under CAA section 112(f)(2). The commenter argued that the EPA has not shown that it has considered whether the uncertainties regarding its health risk assessment require a stronger standard.<sup>16</sup>

*Response:* We agree with commenters that baseline risks for the Miscellaneous Organic Chemical Manufacturing source category were unacceptable. However, we disagree with commenters who objected to our determinations of risk acceptability and ample margin of safety after implementation of proposed controls. As explained in the preamble to the proposed rule (84 FR 69182, December 17, 2019), section 112(f)(2) of the CAA expressly preserves the EPA's

use of the two-step process for developing standards to address residual risk and interpret "acceptable risk" and "ample margin of safety" as developed in the Benzene NESHAP (54 FR 38044, September 14, 1989). As explained in the Benzene NESHAP, "the first step judgment on acceptability cannot be reduced to any single factor" and, thus, "[t]he Administrator believes that the acceptability of risk under section 112 is best judged on the basis of a broad set of health risk measures and information." 54 FR 38046, September 14, 1989. Similarly, with regard to the ample margin of safety determination, "the Agency again considers all of the health risk and other health information considered in the first step. Beyond that information, additional factors relating to the appropriate level of control will also be considered, including cost and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors." *Id.* As also explained in the preamble to the proposed rule (84 FR 69182, December 17, 2019), the EPA has adopted this approach in its residual risk determinations, and the Court has upheld the EPA's interpretation that CAA section 112(f)(2) incorporates the approach established in the Benzene NESHAP into the statute. See *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Cir. 2008).

As discussed previously, we have revised the residual risk assessment for the final rule to incorporate additional data received from a CAA section 114 request, as well as updated emissions data for ethylene oxide received during the public comment period, for the two facilities with cancer risks greater than 100-in-1 million at the time of proposal. Revisions to the risk assessment incorporate the best available data and result in an improved assessment of the risks from these sources. The revised risk assessment (documented in the *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, which is available in the docket for this rulemaking) shows that, both before and after application of Control Option 1, seven of the eight facilities with equipment in ethylene oxide service have estimated cancer risks below the 100-in-1 million benchmark. After application of controls for process vents, storage tanks, and equipment leak Control Option 1 as required by this final rule, the remaining facility,

<sup>15</sup> Commenter provided the following reference: 54 FR 38045, September 14, 1989.

<sup>16</sup> Commenter provided the following reference: *NRDC*, 824 F.2d at 1165 ("Congress . . . recognized in section 112 that the determination of what is 'safe' will always be marked by scientific uncertainty and thus exhorted the Administrator to set emission standards that will provide an 'ample margin' of safety.").

Lanxess, has estimated cancer risks of 200-in-1 million.

Regarding the post-control cancer risks of 200-in-1-million, based on the revised risk assessment, we note that 100-in-1 million cancer risk is not a bright line indicating that risk is “acceptable.” As noted by commenters, the EPA has previously accepted MIRs that exceeded 100-in-1 million (*i.e.*, 200-in-1 million in the Benzene NESHAP, 54 FR 38047; 200-in-1 million in the National Emission Standards for Coke Oven Batteries, 70 FR 19993; and 200-in-1 million in the National Perchloroethylene Air Emissions Standards for Dry Cleaning Facilities, 71 FR 42731). We note that one commenter claimed that the EPA found a cancer risk as high as 600-in-1 million acceptable for equipment leaks in the Benzene NESHAP. This is inaccurate. A 600-in-1 million risk estimate was discussed in the proposed Benzene NESHAP. However, this estimate was found to be based on outdated emissions and, in the final Benzene NESHAP, the EPA noted that while it did not have enough time to do so, if it had estimated risks based on updated emissions information, risks were expected to be approximately 100-in-1 million; this was the basis for the risk acceptability determination (54 FR 38048).

When considering risk acceptability, the EPA considers all of the health risk information and the associated uncertainties (*e.g.*, uncertainties in emissions, relevant health effects information), as well as the inherent health protective nature of our risk assessment methods. For example, many of the dose-response values we use for HAP are considered plausible upper-bound estimates. For the revised risk assessment for this source category, the risk driver was ethylene oxide, and we used the 2016 EPA IRIS URE for ethylene oxide to calculate increased cancer risk. As noted in the preamble to the proposed rule, the modeled cancer risks due to emissions of ethylene oxide are sensitive to the URE applied. For EPA’s 2016 ethylene oxide URE, the memorandum, *Sensitivity of Ethylene Oxide Risk Estimates to Dose-Response Model Selection*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0027) and discussed at length in the proposal preamble, highlighted two key aspects (*i.e.*, upper-bound estimate and dose-response model) potentially contributing to the conservative (*i.e.*, health protective) nature of the final 2016 URE. When taken into account, these two aspects provide important context for interpreting risks remaining

post-control and indicate that the risks are acceptable.

Furthermore, we note that few people are exposed to cancer risks greater than 100-in-1 million, one of the components of health risk information considered when estimated cancer risks exceed the presumptive benchmark of 100-in-1 million. We estimate that, of the 89,000,000 people living within 50 km of a source category facility, 107 (0.0001 percent) would be exposed to levels greater than 100-in-1 million due to emissions from the source category. We also note that the number of people exposed to risks above 100-in-1 million is similar to other rules where risks above 100-in-1 million were found to be acceptable (100 people in the Benzene NESHAP, 54 FR 38047; 70 people in the National Emission Standards for Coke Oven Batteries, 70 FR 19993; and two people in the National Perchloroethylene Air Emissions Standards for Dry Cleaning Facilities, 71 FR 42731). We also note that the cancer incidence (0.09), while higher than the estimated incidence for Dry Cleaning Facilities (0.002), is comparable to cancer incidence used in acceptability determinations for the Benzene NESHAP (0.05) and for Coke Oven Batteries (0.06), despite considerably more facilities in this source category (194) compared to the others (12, 36, and four facilities, respectively). Also, the percentage of people exposed to cancer risks greater than or equal to 1-in-1 million (2 percent of the population living near a facility) is within the range of other rules such as the Benzene NESHAP (0.4 percent) and Coke Oven Batteries (12 percent).

Finally, no other safe controls were identified to further reduce risks. While equipment leak Control Option 2 for equipment in ethylene oxide service was considered, based on comments and information received on the proposed rule, it would not be appropriate to apply to equipment in ethylene oxide service due to concerns of explosions. Additional details on comments received and our response for equipment leak Control Option 2 are provided in section IV.A.3.c of this preamble.

Therefore, we disagree with commenters that maintain that the EPA should ensure that the MIR is substantially below the presumptive benchmark of 100-in-1 million, or that the EPA must prevent all unacceptable health risks. Considering all of the relevant health risk information and factors discussed in the Benzene NESHAP and presented in the proposal preamble, including the uncertainties discussed in section III of the proposal

preamble (*i.e.*, the emissions dataset, dispersion modeling, exposure estimates, and dose-response relationships), the EPA’s use of the 2016 IRIS URE for ethylene oxide (which is developed to be health protective), and concerns raised by commenters, we conclude that the risks from HAP emissions for the Miscellaneous Organic Chemical Manufacturing source category, after application of the requirements that we are adopting, including application of the ethylene oxide-specific controls, will achieve acceptable risks for this source category and provide an ample margin of safety to protect human health (consistent with the Benzene NESHAP framework).

### c. Rule Changes

*Comment:* Commenters requested that the EPA reconsider the ethylene oxide thresholds for storage tanks and process vents identified in the proposed definition of “in ethylene oxide service” because the thresholds the EPA has proposed for defining process vents and storage tanks in ethylene oxide service would encompass far more storage tanks and process vents than the EPA has accounted for in the rulemaking record. The commenters explained that ethylene oxide is used as a reactant/intermediate in the production of a wide variety of chemicals. The commenters added that because these chemicals are made with ethylene oxide, they may contain small residual amounts of unreacted ethylene oxide at concentrations much less than 0.1 percent. The commenters said that even such low amounts of ethylene oxide would represent “knowledge that ethylene oxide could be present” in a number of process vents and storage tanks far beyond the number of facilities identified in the rulemaking record. The commenters stated that if finalized the requirement would likely result in a significant number of storage tanks being subject to the ethylene oxide requirements for which the EPA did not estimate the costs of control or other compliance burden in their impacts analysis. Instead, the commenters recommended revising the threshold to 0.1 percent by weight for storage tanks; and noted that setting the concentration threshold to 0.1 percent by weight as an annual average is consistent with the “de minimis” concentration threshold applicable to toxic chemical release reporting under 40 CFR part 372 and the hazardous chemical inventory reporting requirements under the Emergency Planning and Community Right-To-Know Act (EPCRA). The commenters stated that suppliers are not required to inform receiving companies of the

potential presence of ethylene oxide at levels in the 1 ppmw to 1,000 ppmw (0.1 percent) range; and facilities routinely report under these programs and that standardizing the definition of “in ethylene oxide service” will allow facilities to continue to use their current chemical inventory tracking systems to determine whether ethylene oxide could potentially be present.

Some commenters also supported revising the threshold to 0.1 percent by weight for process vents. Other commenters supported regulating process vents where the concentration of ethylene oxide exceeds 20 ppmv on an annual average basis at the point of discharge to the atmosphere or the point of entry into a control device. The commenters noted that setting a 20 ppmv threshold for a vent to be considered as being in ethylene oxide service would still be sufficiently protective and would require what are now Group 2 continuous or batch process vents to be controlled. Some commenters also suggested raising the 5 lb/yr mass threshold and clarifying where process vent characteristics should be determined (after the last recovery device but prior to the inlet of any control device that is present and prior to release to the atmosphere). Several commenters objected to the phrase in the proposed rule definition of “in ethylene oxide service” as it relates to process vents that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide “anywhere in the process,” and when combined, the sum of all these process vents would emit uncontrolled, “undiluted” ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). Commenters questioned the use of the term “undiluted” as part of the mass emission criteria. One commenter also asked for clarification that some process vents may remain uncontrolled as long as the ethylene oxide from all process vents (controlled and uncontrolled) is less than 5 lb/yr and also asked the EPA to clarify that the 5 lb/yr is on an MCPU-by-MCPU basis.

*Response:* After consideration of these comments, we agree that storage tanks containing less than 1,000 ppmw of ethylene oxide (less than 0.1 percent by weight) should not be considered in ethylene oxide service. We agreed that a 1,000 ppmw threshold that also corresponds to the chemical inventory reporting requirements under EPCRA and other supplier notification requirements does reduce the uncertainty for the regulated community and eliminates the burden of performing analyses to demonstrate compliance

with the rule, while preserving the emissions reductions associated with continuing to regulate those storage tanks containing significant amounts of ethylene oxide. The 1,000 ppmw threshold is also identical to the “in ethylene oxide service” criterion for applicability to the ethylene oxide-specific requirements for equipment leaks, which should also streamline applicability determinations for process equipment, piping, and storage tanks. Because of its reactivity, ethylene oxide is stored either as a pure component or in solution with other material in very low concentrations (*e.g.*, at impurity levels). We agree with commenters that emissions from tanks storing impurity levels of ethylene oxide are very low and do not result in additional risk. We agree that raising this threshold will reduce the cost of compliance for those facilities that may store and use a chemical that contains ethylene oxide at very low levels but for which emissions are negligible. We are also not providing additional constraints or clarifications on the determination of the threshold (*e.g.*, providing averaging times) for this revised threshold as we believe it is no longer needed and note that the EPCRA and supplier notifications will generally be the basis for applicability determinations.

We are not revising the threshold for process vents. First, we do not support the same threshold for process vents as tanks (1,000 ppmw), as some commenters suggest, because this value would essentially exempt all ethylene oxide-containing process vents that we have information on in the source category and would, therefore, not result in any reductions in emissions or risks. Other commenters have suggested a lower threshold of 20 ppmv ethylene oxide. We note that the process vent ethylene oxide concentrations measured in response to the CAA section 114 request ranged from 4 ppmv to 120 ppmv, and the quantifiable detection limit was below 0.5 ppmv. Therefore, we consider the proposed 1 ppmv threshold reasonable in terms of being measurable and quantifiable and also appropriate for the vent stream characteristics we intended to regulate that resulted in risk reductions. We also are not revising the 5 lb/yr mass threshold for the process vents, as the commenters did not suggest an alternative value to the mass-based threshold, although we agree that it was our intent that it be applied on an MCPU-by-MCPU basis. We also are not finalizing suggested provisions for sampling sites to remain consistent with the current MON requirements

regarding the determination of uncontrolled emissions as they apply to both batch and continuous process vents. The location for determining the concentration and mass threshold is already provided in the MON, which includes “the point of discharge to the atmosphere or the point of entry into a control device” as the location of the process vent. For this reason, we are also revising the definition of “in ethylene oxide service” to remove the phrase “anywhere in the process” to clarify, as we have adequately specified the point at which the process vent characteristics should be evaluated. Finally, we have also removed the phrase “undiluted” from the mass-based criteria in the definition of in ethylene oxide service as we agree it does not apply to a mass-based threshold.

*Comment:* One commenter contended that the preamble discussion and proposed language in the rule is unclear as to whether the existing 0.005 weight percent total organic HAP cut-off in 40 CFR 63.107(d) of the continuous process vent definition (as referenced by the MON’s continuous process vent definition in 40 CFR 63.2550) and the 50 ppmv HAP and 200 lb/yr uncontrolled HAP emission cut-offs in the batch process vent definition in 40 CFR 63.2550 still apply relative to the definition of “in ethylene oxide service” for process vents. The commenter requested the EPA confirm that since there is not specific language in the rule eliminating these exemptions for continuous and batch process vents in ethylene oxide service, we assume that the exemptions could still potentially apply. The commenter explained their interpretation of the proposed rule is that before the ethylene oxide requirements for process vents apply, the gas stream or emission stream must first meet the “continuous process vent” or “batch process vent” definition in 40 CFR 63.2550.

*Response:* The commenter is incorrect in their interpretation. In the proposed and final rule, process vents in ethylene oxide service are defined separately, and the existing 0.005 weight percent total organic HAP cut-off in 40 CFR 63.107(d) of the continuous process vent definition (as referenced by the MON’s continuous process vent definition in 40 CFR 63.2550) and the 50 ppmv HAP and 200 lb/yr uncontrolled HAP emission cut-offs in the batch process vent definition in 40 CFR 63.2550 do not apply to the definition of “in ethylene oxide service” for process vents. Nevertheless, we are clarifying the definitions of “batch process vent” and “continuous process vent” in the final rule to make clearer that these cut-offs

do not apply to process vents in ethylene oxide service. We note that process vents could contain HAP other than ethylene oxide, and, therefore, it is possible that a process vent could be both in ethylene oxide service and also considered a Group 1 or Group 2 process vent. Owners or operators should consider all definitions that may apply as well as all control requirements when evaluating applicability and compliance obligations.

*Comment:* In response to our request for comment on the co-proposed Control Options for equipment leaks in ethylene oxide service, some commenters supported requiring equipment leak Control Option 2 for equipment in ethylene oxide service because health risks are unacceptable. One commenter contended that the EPA allowing the residual risks from these two highest risk facilities to be above the EPA's acceptable cancer risk level of 100-in-a-million, after leak controls, would set an unsatisfactory precedent for future RTRs. The commenter suggested that the EPA consider this an iterative process with regards to leak controls and pursue the goal of further reducing risks below the 100-in-a-million cancer risk level. Other commenters requested that the EPA apply Control Option 2 to all facilities in ethylene oxide service.

Some commenters did not support either equipment leak Control Option 1 or 2 for equipment in ethylene oxide service, but if the EPA were to finalize one of the options, they would prefer Control Option 1 with modifications. One commenter contended that the risks from the two facilities are substantially overstated so neither option is necessary, but Control Option 1 would be sufficient to reduce risks. Some commenters opposed the use of leakless valves in Control Option 2 for ethylene oxide service because of safety concerns. The commenters contended that leakless valves are more likely to trap ethylene oxide in valve cavities, and stagnant ethylene oxide polymerizes, creating heat that can cause explosions. The commenters added that the EPA inadequately addressed these safety issues and cited no actual experience with such designs in ethylene oxide service.

Commenters contended that the EPA's cost analysis for leakless valves significantly underestimates costs. One commenter added that the EPA's estimate does not include costs for engineering analysis or installation of valves, which are typically 2 to 3 times the equipment cost. One commenter added that engineering costs could be significant as bellows valves are heavier than existing equipment and evaluation

for additional piping supports would be required, and the larger size of these valves would likely require reconfiguration and refabricating process piping for required clearance. The commenter continued that replacing existing valves with leakless valves will require an extended process shutdown to clear and purge the process and then replace the valves and that the EPA provides no information on the time to do this or the cost to affected companies of lost production.

*Response:* We agree that Control Option 1 for equipment in ethylene oxide service would sufficiently reduce risks, and we are finalizing Control Option 1 in the final rule, except as discussed later in this section of the preamble, in lieu of prohibiting PRDs in ethylene oxide service from releasing directly to the atmosphere, we are clarifying in the final rule that these PRDs must comply with the pressure release management work practice standards proposed at 40 CFR 63.2480(e) and (f), and any release event from PRDs in ethylene oxide service is a deviation of the standard. During the comment period, commenters provided updated information on their facilities, including specific information regarding sources in their facility that are subject to the MON, emissions from each source, controls in use, and operating information. We updated the risk assessment for the two facilities that, at proposal, had a MIR greater than 100-in-1 million. As discussed previously in this section of the preamble, after application of the ethylene oxide-specific controls for process vents, storage tanks, and equipment leaks from co-proposed Control Option 1, we find that the revised risks are acceptable and that the final standards will achieve an ample margin of safety to protect human health.

We reviewed whether Control Option 2 would provide additional emission reductions but determined that Control Option 2 was not appropriate to apply to equipment in ethylene oxide service based on comments and information received on the proposed rule. First, we reviewed the comments and information provided by the commenters and agree that there are potential safety concerns with the use of leakless valves for ethylene oxide service. We agree that many leakless valve designs, such as bellows seal valves, have extended packing cylinders, which have more volume and areas where ethylene oxide can be trapped and polymerize, resulting in the valve stem to stop working and the potential for explosions. No information was provided by commenters or identified

from our review of available data for other sources that indicated that leakless valves are being or have been used for ethylene oxide service. Because of the safety concerns and no evidence that leakless valves are successfully being used for ethylene oxide service at this time, the final rule does not require their use. The current MON rule already requires gas and light liquid valves to be monitored at a leak definition of 500 ppm, and we did not propose different leak definitions for valves as part of Control Option 1. Secondly, although leakless pumps have been used instead of light liquid pumps for processes in ethylene oxide service, new data obtained during the comment period from Lanxess indicated that this facility does not have pumps in light liquid service that would be subject to the leakless pump requirement. Therefore, a requirement to install leakless pumps for light liquid pumps would not result in any changes to the estimated risks. As a result of the comments and information received and the results of the revised Risk Assessment, we are finalizing Control Option 1 for equipment leaks.

*Comment:* Several commenters disagreed with the operating parameters we proposed to require be continuously monitored for scrubbers used to control emissions from process vents and storage tanks in ethylene oxide service. Several commenters noted that column pressure drop is a reliable measurement for scrubbers that can identify flooding conditions, but may not identify channeling conditions, when scrubber efficiency is depleted as gas flow "channels" around the liquid blowdown. One commenter contended that background documents in the rulemaking docket do not have any justification for requiring a maximum pressure drop as an operating parameter limit, but speculated that the EPA had proposed a maximum to address a decrease in removal efficiency due to plugging or fouling of the packed bed. Commenters stated that engineering design should be allowed for establishing the critical process parameters for monitoring. One commenter stated that setting the maximum operating limit as the average measured during the performance test is impracticable because the pressure drop during the performance test will be measured when the packing material is cleanest. The commenter added that over time the packing material may foul and pressure drop may increase, but not to an extent which causes decreased performance. The commenter continued that the pressure drop will increase as

either gas flow or liquid flow through the scrubber increases. The commenter added that the requirement to operate below a maximum pressure drop conflicts with the requirement to operate above a minimum liquid to gas ratio. The commenter concluded that if the EPA retains the requirement to operate below a maximum pressure drop in the final rule, facilities should be allowed to set the maximum pressure drop based on manufacturer's recommendations or an engineering evaluation, not the average pressure drop measured during the most recent performance test.

Additionally, several commenters contended that monitoring liquid feed pressure is redundant with monitoring liquid-to-gas ratio and should not be included in the final rule. Commenters contend that monitoring feed pressure is an indirect method to assess scrubber liquid supply, while monitoring the scrubber liquid-to-gas ratio requires direct measurement of the liquid inlet flow rate.

*Response:* The EPA is maintaining the requirement to monitor pressure drop across the scrubber and liquid feed pressure to the scrubber in the final rule. As commenters note, pressure drop across a scrubber is a valuable piece of information on the operation of the scrubber. It can indicate issues with flooding, plugging, channeling, and fouling of the control device. However, we do agree with commenters that it may be challenging to establish the maximum pressure drop at the same time as the minimum liquid-to-gas ratio is established. The liquid-to-gas ratio is the primary parameter of concern in a typical wet scrubber system because it ensures that there is enough liquid available to clean the gas flowing through the system. Therefore, while we are maintaining the requirement to monitor pressure drop across the scrubber, in the final rule, we are allowing a pressure drop range to be established based on the manufacturer's recommendation or engineering analysis.

We disagree with commenters that the liquid feed pressure is redundant to the liquid flow rate. While the liquid feed pressure should indicate that liquid is flowing in the system, liquid feed pressure is also important for determining that the liquid is being appropriately dispersed within the scrubbing system, which is not something that the liquid flow rate alone can indicate. We think that ensuring the dispersion of the liquid stream is especially critical in ethylene oxide control, in order to ensure that the ethylene oxide adsorbs into the liquid

stream so that it can undergo the conversion reaction. However, we are also aware that increases in liquid feed pressure can also be caused by blockages in the nozzle, and as such, the minimum pressure could be met without the nozzle properly atomizing the liquid stream. While we continue to believe that this is an important operating parameter for ethylene oxide scrubbers, we believe that this parameter does not necessarily need to be based on the performance test, and that the manufacturer should be able to provide information on what pressure in the nozzle will ensure proper operation of the nozzle. Therefore, while we are maintaining the requirement to monitor liquid feed pressure, in the final rule, we are allowing a liquid feed pressure range to be established based on the manufacturer's recommendation or engineering analysis.

*Comment:* Commenters requested the EPA revise the requirement to demonstrate compliance with the operating parameter limits for scrubbers used to control emissions from process vents and storage tanks in ethylene oxide service from an instantaneous basis to a daily average basis. Commenters explained that a daily average is consistent with the currently applicable requirements of 40 CFR part 63, subpart SS. One commenter stated that an instantaneous compliance demonstration with a measured value will likely lead to operators unnecessarily adjusting operating parameters in response to brief excursions due to changing process conditions. Another commenter explained that automated controls which maintain flow rate, temperature, pH, and other variables are typically "feedback" based or "closed loop control," and even the best tuned controllers have some amount of response time. The commenter added that instantaneous compliance demonstrations will invariably lead to operators manually attempting to adjust control system variables which will likely lead to overshoot and potentially decreased control efficiency and concluded that the EPA must allow some amount of averaging to account for the inherent response time of control systems and deadtime of process response.

One commenter added that a daily average aligns better with the process of establishing the parameter operating limits during a performance test, which typically consists of three 1-hour runs. Another commenter contended that the rule should at least allow for 3-hour averages and stated this would be more consistent with other 40 CFR part 63

MACT rules (such as the Hazardous Organic NESHAP (HON)) and with the process of establishing the parameter operating limits during a performance test (*i.e.*, testing typically consists of three 1-hour runs).

*Response:* The EPA is changing the continuous compliance requirements for the operating parameters, such that compliance with the operating parameter limits is determined on an hourly average basis instead of an instantaneous basis. We agree that instantaneous limits on operating parameters may cause some unintended consequences with control loops and that some degree of averaging is warranted.

While we acknowledge that compliance with other operating parameters for MON sources is based on a daily average, per the requirements in 40 CFR part 63, subpart SS, we do not agree that this averaging basis is appropriate for operating parameters on control devices used for ethylene oxide process vents and storage tanks. Control devices used for ethylene oxide emissions operate differently than other control devices and are required to achieve better control than other control devices. In order to achieve 99.9-percent control from these devices, it is important to ensure that the ethylene oxide control is continuously occurring. These control devices tend to be used on batch processes, where the ethylene oxide emissions may fluctuate greatly with different steps in the process. Longer averaging times could mask issues with achieving the required control efficiency during brief periods of higher ethylene oxide loading to the control device (*e.g.*, during tank loading events). In order to ensure continuous compliance with the control efficiency requirement, we are requiring compliance with the operating parameters be based on a 1-hour average in the final rule.

*Comment:* Commenters interpreted the proposed language at 40 CFR 63.2493(d)(4) to mean that (1) the discharge piping on PRDs in ethylene oxide service cannot be routed to the atmosphere and (2) any release event is an automatic violation of the MON rule. Commenters contended that the proposed rule seems to require that the PRD be directed to some form of emission control equipment, such as a flare. Commenters opposed requiring all PRDs in ethylene oxide service vent to a control device. Commenters contended the requirement would create safety concerns including the hydraulic limitations of the flare or other control device, backpressure limitations on the PRDs, and the incompatibility of

chemicals in vent streams in downstream controls. Commenters noted that ethylene oxide is a compound which contains oxygen and is highly reactive, extremely flammable, and can violently decompose with a significant release of heat in the absence of air, and ethylene oxide also tends to polymerize, which could result in plugging of the closed vent system or control device. The commenter concluded that existing closed vent systems and control devices require careful evaluation to determine if emissions from such events can be safely controlled.

A commenter stated that because they are of limited duration and number, such events would not lower cancer risks, which are based on long term exposures. The commenter pointed out that the EPA makes no mention of PRDs when discussing ethylene oxide risk drivers.

The commenter stated that the same technical limitations that apply to PRDs in general also apply to those in ethylene oxide service. Commenters supported requiring PRDs in ethylene oxide service to comply with the proposed PRD work practice at 40 CFR 63.2480(e). A commenter stated that other existing EPA regulations already require the owner/operator to minimize or eliminate the potential for such releases, such as the EPA regulations at 40 CFR part 302 and 40 CFR part 355 have a 10-pound reportable quantity for ethylene oxide if a release from any equipment occurs. The commenter added that if a release greater than 10 pounds occurs, then the owner/operator must report it to the National Response Center, the State Emergency Response Commission (typically a state environmental agency), and the Local Emergency Planning Committee when the owner/operator has knowledge of such a release.

A commenter added that a MON MCPU may not have a flare or may be located in an area of a larger site where there is not adequate land space for a flare.

A commenter added that if a new flare or other emission control equipment is required, design and installation of a flare system or other emission control equipment within 2 years of the final date of this rule is not practical. Commenters stated that typically, it takes 3 years to properly engineer the project, obtain capital authorization and funding, procure the equipment, and construct and start-up the equipment. Commenters noted that the EPA has not provided any background information in the preamble or in the rule docket that addresses costs or the feasibility of

installing large flares or other air emission control equipment within the 2-year compliance period.

*Response:* We are revising the proposed requirement that PRDs in ethylene oxide service must not vent directly to the atmosphere. In lieu of prohibiting PRDs in ethylene oxide service from releasing directly to the atmosphere, we are clarifying in the final rule that these PRDs must comply with the pressure release management work practice standards proposed at 40 CFR 63.2480(e) and (f). We are also clarifying that any release event from PRDs in ethylene oxide service is a deviation of the standard. We are finalizing these requirements pursuant to CAA section 112(f)(2), on the basis for risks being unacceptable. Where we find risks are unacceptable, the EPA must determine the emissions standards necessary to reduce risk to an acceptable level. Because emissions of ethylene oxide from this source category result in unacceptable risks, we proposed and are finalizing requirements that would reduce risks to an acceptable level, including provisions that would make all PRD releases of ethylene oxide directly to the atmosphere a violation of the standard. We believe that there are very few PRDs in ethylene oxide service that vent to the atmosphere. Note that the proposed rule does not specify that PRDs must be controlled with flares; in fact, the detailed information we have indicate that most of these emission sources are controlled using scrubbers. Further, we reviewed emission release reports from the National Response Center for the 5-year period beginning in 2015 through 2019 and identified only one reported release of ethylene oxide from an ethylene oxide production facility which is not part of the Miscellaneous Organic Chemical Manufacturing source category. Also, during the public comment period, commenters did not submit any specific information on the existence of, or lack of, ethylene oxide releases from PRDs in the Miscellaneous Organic Chemical Manufacturing source category. Therefore, we maintain that controlling PRDs in ethylene oxide service is possible, and in fact represents the majority of industry's practice in this source category.

4. What is the rationale for our final approach and final decisions for the risk review?

As noted in our proposal, the EPA sets standards under CAA section 112(f)(2) using "a two-step standard-setting approach, with an analytical first step to determine an 'acceptable risk' that considers all health information,

including risk estimation uncertainty, and includes a presumptive benchmark on MIR of approximately 1-in-10 thousand" (84 FR 54278, October 9, 2019; see also 54 FR 38045, September 9, 1989). We weigh all health risk factors in our risk acceptability determination, including the cancer MIR, cancer incidence, the maximum cancer TOSHI, the maximum acute noncancer HQ, the extent of noncancer risks, the distribution of cancer and noncancer risks in the exposed population, multipathway risks, and the risk estimation uncertainties.

Since proposal, our determinations regarding risk acceptability, ample margin of safety, or adverse environmental effects have not changed. However, after proposal, commenters provided updated information on their facilities, including specific information regarding sources in their facility that are subject to the MON, emissions from each emissions source, controls in use, and operating information. We updated the risk assessment for the two facilities that, at proposal, had a MIR greater than 100-in-1 million. The revised risk assessment (see document, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, which is available in the docket for this rulemaking) shows that, after application of controls finalized in this rulemaking, the MIR for the source category is 200-in-1 million.

As discussed in section IV.A.3.b of this preamble, the 100-in-1 million cancer risk is not a bright line indicating that risk is "acceptable"; rather, we consider this health metric in conjunction with a variety of health factors and their associated uncertainties to determine whether the risk is acceptable. We considered the number of people exposed to risks greater than 100-in-1 million (107 people, or 0.0001 percent of the population living near a facility in the source category), the cancer incidence (0.09), and the number of people exposed to cancer risk levels greater than 1-in-1 million (1,400,000 people, or 2 percent of the population living near a facility in the source category), which are consistent with other rules where risks above 100-in-1 million were found to be acceptable (see section IV.A.3.b of this preamble for more details). We also considered that no safe controls were identified to further reduce risks. Therefore, considering the uncertainties inherent in all risk assessments as discussed in the preamble to the proposed rule (*i.e.*, the emissions dataset, dispersion modeling, exposure

estimates, and dose-response relationships) (see 84 FR 69219) and the EPA's use of the 2016 IRIS URE for ethylene oxide (which is developed to be health protective), and additional considerations discussed here and in more detail in section IV.A.3.b of this preamble, after application of the ethylene oxide-specific controls for process vents, storage tanks, and equipment leaks from co-proposed Control Option 1, we find that the risks are acceptable and that the final standards will achieve an ample margin of safety to protect human health.

#### B. Technology Review for the Miscellaneous Organic Chemical Manufacturing Source Category

1. What did we propose pursuant to CAA section 112(d)(6) for the Miscellaneous Organic Chemical Manufacturing source category?

Based on our technology review for the Miscellaneous Organic Chemical Manufacturing source category, we proposed under CAA section 112(d)(6) changes to the standards for equipment leaks and heat exchange systems, and we proposed no change under CAA section 112(d)(6) for process vents, storage tanks, transfer racks, and wastewater streams. We provide a summary of our findings, as proposed, in this section.

##### a. Equipment Leaks

In our technology review for the Miscellaneous Organic Chemical Manufacturing source category, we identified developments in LDAR practices and processes for equipment leaks (excluding equipment in ethylene service). We identified four options for lowering the leak definition for certain process and component types and requiring periodic monitoring, and the options varied by leak definition level, process type (*i.e.*, batch process *v.* continuous process), component type, and monitoring frequency. Refer to section IV.D.1 of the proposal preamble (84 FR 69182, December 17, 2019) for a summary of the four options. Based on our evaluation of the costs and emission reductions of each of the four options, we determined that the most cost-effective strategy was to lower the leak definition for pumps in light liquid service (in an MCPU that has no continuous process vents and is part of an existing source) from 10,000 ppmv to 1,000 ppmv with monthly monitoring and initial monitoring within 30 days after initial startup of the equipment, which we proposed pursuant to CAA section 112(d)(6) to further reduce HAP emissions from equipment leaks for

MON equipment not in ethylene service.

For a detailed discussion of the EPA's findings, refer to the memorandum, *Clean Air Act Section 112(d)(6) Technology Review for Equipment Leaks Located in the Miscellaneous Organic Chemical Manufacturing Source Category*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0003).

##### b. Heat Exchange Systems

In our technology review for the Miscellaneous Organic Chemical Manufacturing source category, we identified one development in practices and processes for heat exchange systems, the use of the Modified El Paso Method<sup>17</sup> for monitoring for leaks from heat exchange systems. We determined that this method is more effective in identifying leaks and measures a larger number of compounds than the methods previously required in the MON. After evaluating state and Federal regulations requiring the Modified El Paso Method, as well as emission data collected for the Ethylene Production RTR (refer to section II.D of the proposal preamble (84 FR 69182, December 17, 2019) and the Ethylene Production RTR rulemaking docket, Docket ID No. EPA-HQ-OAR-2017-0357), we proposed pursuant to CAA section 112(d)(6) to require use of the Modified El Paso Method with a leak definition of 6.2 ppmv of total strippable hydrocarbon concentration (as methane) in the stripping gas to further reduce HAP emissions from both new and existing heat exchange systems, as well as to disallow delay of repair of leaks if the measured concentration meets or exceeds 62 ppmv. Based on an evaluation of incremental HAP cost effectiveness to increase the monitoring frequency, we proposed no changes to the monitoring frequency previously required under the MON for monitoring for leaks from heat exchange systems, which continues to be monthly monitoring in the first 6 months following startup of a source and quarterly monitoring thereafter. We also proposed to require re-monitoring at the monitoring location where a leak is identified to ensure that any leaks

<sup>17</sup> The Modified El Paso Method uses a dynamic or flow-through system for air stripping a sample of the water and analyzing the resultant off-gases for volatile organic compounds (VOC) using a common flame ionization detector (FID) analyzer. The method is described in detail in Appendix P of the TCEQ's Sampling Procedures Manual: *The Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound (VOC) Emissions from Water Sources*. Appendix P is included in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0024).

found are fixed. Further, we proposed that none of these proposed requirements for heat exchange systems apply to heat exchange systems that have a maximum cooling water flow rate of 10 gpm or less. Refer to section IV.D.2 of the proposal preamble (84 FR 69182, December 17, 2019) for a summary of our rationale for selecting the proposed leak method, leak definition, and limitation on delay of repairs, as well as our rationale for retaining the previous monitoring schedule.

For a detailed discussion of the EPA's findings, refer to the memorandum, *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the Miscellaneous Organic Chemical Manufacturing Source Category*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0007).

##### c. Process Vents, Storage Tanks, Transfer Racks, and Wastewater Streams

In our technology review of process vents, storage tanks, transfer racks, and wastewater streams for the Miscellaneous Organic Chemical Manufacturing source category, we identified no cost-effective developments in practices, processes, or control technologies for these emissions sources that would achieve a greater HAP emission reduction beyond the emission reduction already required by MON. Therefore, we proposed no revisions to the MON pursuant to CAA section 112(d)(6) for process vents, storage tanks, transfer racks, and wastewater streams. For a detailed discussion of the EPA's findings, refer to the memorandum, *Clean Air Act Section 112(d)(6) Technology Review for Process Vents, Wastewater, Transfer Racks, and Storage Tanks Located in the Miscellaneous Organic Chemical Manufacturing Source Category*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0008). This analysis is also described in detail in section IV.B of the preamble to the proposal preamble (84 FR 69182, December 17, 2019).

2. How did the technology review change for the Miscellaneous Organic Chemical Manufacturing source category?

We are finalizing the results of the technology review for the Miscellaneous Organic Chemical Manufacturing source category as proposed (84 FR 69182, December 17, 2019), with the following exceptions.

For equipment leaks not in ethylene oxide service, based on comments received on the proposal, we are clarifying in the final rule that the initial monitoring of equipment is only required if the new or replaced equipment is subject to Table 6 to 40 CFR part 63, subpart FFFF, and is also subject to periodic monitoring with EPA Method 21 of appendix A-7 to 40 CFR part 60 and that the initial monitoring does not apply to equipment classified as unsafe-to-monitor or difficult-to-monitor equipment.

For heat exchange systems, we are taking final action on the proposed requirement to monitor leaks from heat exchange systems using the Modified El Paso Method consistent with the December 17, 2019, RTR proposal. However, based on comments received on the proposed rulemaking, we are also making some technical clarifications to allow compliance with the Modified El Paso Method using an alternative mass-based leak action level of total strippable hydrocarbon equal to or greater than 0.18 kilograms per hour (instead of the proposed concentration-based leak action level) for small heat exchange systems with a recirculation rate of 10,000 gpm or less.

3. What key comments did we receive on the technology review, and what are our responses?

This section provides comment and responses for the key comments received regarding our proposed revisions for equipment leaks; heat exchange systems; and process vents, transfer racks, storage tanks, and wastewater streams. Other comment summaries and the EPA's responses for additional issues raised regarding these activities, as well as issues raised regarding our proposed revisions, can be found in the document *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking.

For equipment leaks not in ethylene oxide service, we received comments on potential issues and problems associated with the proposed requirements for pumps in light liquid service (in an MCPU that has no continuous process vents and is part of an existing source) to meet a leak definition of 1,000 ppmv and requiring facilities to initially monitor for equipment leaks within 30 days after initial startup of the equipment. See section IV.B.3.a of this preamble for further details.

For heat exchange systems, the EPA received additional information from

commenters on costs necessary for control of these sources as well as comments on a number of technical clarifications and allowance of compliance with an alternative mass-based leak action level should the EPA finalize the requirements for heat exchange systems. See section IV.B.3.b of this preamble for further details.

For process vents, transfer racks, equipment leaks, and wastewater streams, the comments were supportive of the determination that no cost-effective developments from the technology review were found. See section IV.B.3.c of this preamble for further details.

#### a. Equipment Leaks

*Comment:* A commenter requested the EPA not finalize the lowering of the leak definition for batch light liquid pumps from 10,000 ppm to 1,000 ppm because it inadvertently removes existing exemptions for all pumps. The commenter contended that instead of simply nullifying 40 CFR 63.2480(b)(5), which sets the leak definition to 10,000 ppm for batch pumps, the language in 40 CFR 63.2480(b)(6) appears to apply to all pumps, not just those for batch processes. The commenter added that as a result, the leak definitions for pumps in specific service (*i.e.*, polymerizing polymers and food/medical service) and the 2,000 ppm repair threshold in subparts H and UU will be overwritten. The commenter contended that the EPA has provided no analysis or justification for such a change. The commenter added that if the revision is intended to apply only to batch pumps, this results in continuation of different standards for batch and continuous pumps. The commenter suggested that to clarify the requirements and streamline compliance the EPA should apply the same standards to all pumps in light liquid service.

*Response:* We agree with the commenter that the proposed requirement of a leak definition of 1,000 ppm for light liquid pumps at both batch and continuous processes directly in the MON rule inadvertently overrode facilities complying with the equipment leak requirements in subparts H and UU as the MON references both rules for leak definitions. The intention of the proposed requirement was to make the light liquid pump requirements for batch processes the same as the existing requirements for continuous processes and streamline the requirements by codifying them in the MON rule. The intention was not to remove the existing exemptions or repair requirements. We have revised the final rule to require light liquid pumps in batch and

continuous processes that are not in ethylene oxide service to comply with the requirements in 40 CFR part 63, subpart H or UU, or 40 CFR part 65, subpart F, which is a leak definition of 1,000 ppmv, by removing the exemption for light liquid pump monitoring in 40 CFR 63.2480(b)(5) and 40 CFR 63.2480(c)(5) and removing the proposed leak definition in the MON.

*Comment:* Some commenters requested the EPA not finalize the proposed requirements at 40 CFR 63.2480(b)(7) and (c)(11) that specify initially monitoring leaks 30 days after initial startup of the equipment. The commenters contended this requirement adds a significant burden that the EPA did not consider, nor has the EPA provided any justification as to whether this requirement would provide any emissions reductions.

One commenter contended that 40 CFR 63.2480(b)(7) and (c)(11) specify that "each piece of equipment" must be monitored initially for leaks within 30 days after initial startup of the equipment and that the term "Equipment" is already defined in the MON at 40 CFR 63.2550. The commenter contended that this could be interpreted to require this 30-day monitoring requirement to apply to every single piece of equipment within the scope of the "Equipment" definition regardless of monitoring exemptions or the fact that some component types do not require routine monitoring. The commenter stated that equipment excluded from monitoring under the MON (*e.g.*, equipment routed to control, fuel gas or a process; equipment in heavy liquid service; instrumentation systems; open-ended lines and valves; and connectors) should be excluded from this new requirement. The commenter also contended that pumps and agitators are already checked weekly and monthly and thus should be excluded from this new requirement and that, for clarity and simplicity, it would be simplest to limit these new requirements to gas and light liquid valves. The commenter also requested that the EPA clarify that "replacement" does not include reinstalling an item of equipment that has been removed for inspection or repair. The commenter provided an example of PRDs that are typically removed for bench testing and then replaced. The commenter continued that since the bench test confirms the PRD does not open until the set pressure is reached, there is no need to test it outside of the normal periodic schedule. The commenter also identified repaired equipment as already being required to re-monitor within 15 days and thus should also be

excluded from the 30-day requirement. Another commenter recommended that this initial monitoring requirement should also apply only to equipment that is subject to periodic monitoring with EPA Method 21 of appendix A-7 to 40 CFR part 60.

Some commenters stated that the proposed requirement would require significant training of maintenance and operations staff and development and implementation of tracking systems to ensure no equipment component is replaced or added without conducting the 30-day monitoring. Commenters stated that this will place a significant burden and cost to an MCPU and that the EPA did not consider the burden associated with tagging, updating the LDAR program, and managing the component-by-component leak schedule this proposed requirement will impose, especially for equipment that is added or replaced frequently within an MCPU.

Commenters contended some MON processes restrict additional personnel, such as LDAR personnel, in their operating areas for safety reasons; and some equipment is never safe to monitor while in service. The commenters added that safety restrictions may be in place for a period of time, which then reduces the number of days in the 30-day period for the initial monitoring. One commenter concluded that a 30-day period is not long enough to organize the initial monitoring for these components or even components in less restricted areas.

One commenter stated that the compliance date section in 40 CFR 63.2445(g)(3) does not mention when the 30-day requirement in 40 CFR 63.2480(b)(7) and (c)(11) becomes effective, so it appears that the language might be effective the date the final rule is published. The commenter recommended that the requirement in 40 CFR 63.2480(b)(7) and (c)(11) to initially monitor each piece of equipment for leaks within 30 days after initial startup of equipment should be amended to reference the language in 40 CFR 63.162(g) of HON subpart H and 40 CFR 65.3(d) of the Consolidated Federal Air Rule to determine the first monitoring period depending on how many days are left in the week, weeks remaining in the month, months remaining in the quarter, and quarters remaining in the year. Two commenters stated that if the EPA promulgates these requirements, the proposed applicability date should be changed from December 17, 2019, to 3 years after the date of publication of the final rule. One commenter stated that if the EPA promulgates these requirements, more time is needed, such as 3 months from

the time components initially are in organic HAP service. The commenter contended that the EPA cannot impose requirements retroactively and that time is needed to develop the infrastructure to address this requirement.

One commenter contended that this change is presented as a “clarification” in the preamble discussion, but no such requirement was part of the negotiated rulemaking<sup>18</sup> that established the part 63 LDAR program, nor is such a requirement suggested in the existing language as shown by the EPA’s need to propose new language to this rule to impose this requirement. The commenter claimed that this is a new requirement, not a clarification. The commenter added that as such, it must be justified under CAA section 112(d)(6). Commenters contended that nothing is presented in the MON record to show there is a problem with current (generally quarterly) periodic monitoring as specified in the existing 40 CFR part 63, subpart H or UU, or 40 CFR part 65, subpart F. One commenter said that the EPA appears to have recognized the challenges to implementing initial monitoring requirements 30 days after initial startup of equipment and cited the HON as it requires only new sources to initially monitor only valves in gas/vapor service and light liquid service quarterly. The commenter presumed that this provision was added to the HON for new sources because of the results of the MACT determination under the HON. The commenter concluded that the EPA had not conducted a MACT determination for this proposed provision under the MON, nor has it completed a cost-benefit or risk analysis necessary to add this requirement under this technology or risk review.

One commenter contended that by claiming this new requirement is a “clarification” it could mistakenly be construed as applying to all part 63 and 65 LDAR programs. The commenter stated that proposing this change in the MON RTR rulemaking does not provide adequate notice and an opportunity for comment to most of the sources potentially impacted. The commenter recommended that the EPA should clarify that this is a new requirement and is only applicable to sources subject to the MON and that it is not a clarification of existing requirements in 40 CFR part 63, subpart H or UU, or in 40 CFR part 65, subpart F.

*Response:* The EPA did not intend for the requirement to initially monitor

components 30 days after initial startup of the equipment to apply as broadly as the commenters have interpreted. We intended for the requirement to only apply to new or replaced equipment regulated under the MON that must be periodically monitored with EPA Method 21. Similar requirements were promulgated in 40 CFR part 60, subparts VV and VVa. We agree with the commenters that the requirement to monitor equipment within 30 days of startup is not appropriate for equipment that are classified as unsafe-to-monitor or difficult-to-monitor due to their locations and safety concerns.

In the final rule, we are clarifying at 40 CFR 63.2480(b)(7) and (c)(11) that monitoring leaks within 30 days after initial startup applies only to new or replaced equipment that is subject to Table 6 to 40 CFR part 63, subpart FFFF, and is also subject to periodic monitoring with the EPA Method 21 of appendix A-7 to 40 CFR part 60. We are also clarifying that the requirement does not apply to equipment classified as unsafe-to-monitor or difficult-to-monitor equipment. Following the initial monitoring, the equipment may follow the periodic monitoring program applicable to each affected process unit. We are not changing the compliance date for this requirement in the final rule, and the requirement will be effective the date the final rule is published in the **Federal Register**. This requirement only applies to new and replaced components, and as such, we expect facilities are able to appropriately plan ahead for installation of new components.

We disagree with commenters that a 112(d)(6) review is needed for this requirement. The requirement to conduct initial monitoring of equipment for leaks within 30 days of startup is a clarification to the compliance provisions of an existing work practice, not a new work practice. As discussed earlier, a similar change was made for 40 CFR part 60, subpart VV. As we stated in that rulemaking (72 FR 64862), the change is a clarification of the initial monitoring requirements. The clarification is intended to provide certainty to owners or operators on the timeframe in which this compliance activity must be conducted.

#### b. Heat Exchange Systems

*Comment:* We received comments in support of and against the proposal to require use of the Modified El Paso Method for detecting and repairing leaks in heat exchange systems.

One commenter supported the use of the Modified El Paso Method, and stated that in the Ethylene Production

<sup>18</sup> Commenter provided the following reference: 57 FR 62617–62619 (December 31, 1992).

rulemaking, the EPA found that at least 20 heat exchange systems (at eight facilities) are already required by TCEQ's highly reactive volatile organic compounds (HRVOC) rule to conduct continuous Modified El Paso Method monitoring.

Some commenters opposed the proposed control requirements for heat exchange systems, stating the requirements were not cost effective when considering the actual costs to repair leaks. Some commenters said that the costs provided in Table 3 of the memorandum, *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the Miscellaneous Organic Chemical Manufacturing Source Category for the Final Rule*, significantly underestimate the true cost associated with leak repair at MON facilities. The commenters contended that the EPA has not taken into account that after identifying a leak, maintenance and operations personnel must develop a strategy and schedule to remove the leaking exchanger from service to conduct the repair. The commenter explained that this activity involves identifying and selecting options for bypassing the process stream from the leaking system, determining the amount of production turndown necessary while the exchanger is out of service, identifying and selecting the appropriate contract personnel, and scheduling the work so that it does not conflict with any other planned maintenance. The commenters said these steps alone require approximately 128 personnel hours. In addition to these costs, the commenters said that the EPA did not include costs for bypassing the leaking system to avoid a total shutdown, which may include renting and plumbing temporary heat exchangers. The commenters also said that the EPA did not include costs for the rental and installation of cranes and scaffolding for accessing the heat exchanger for repairs or costs for specialized contracted maintenance support to de-head the exchanger and perform the repair. The commenters contended that repair costs range from \$200,000 to \$400,000 per event, not considering lost profit due to turndown or shutdown of the production unit. Factoring in these additional costs and using the EPA's calculated HAP emissions reductions of 31 tons per year, the commenters said the revised cost effectiveness becomes \$161,930 per ton of HAP. The commenters cited the NESHAP final RTR for Friction Materials Manufacturing Facilities (83 FR 19511) where the EPA found a \$3,700 per ton cost for a permanent total

enclosure not cost effective, and the NESHAP proposed RTR for the Petroleum Refinery Sector (79 FR 36916) where the EPA found a \$14,100 per ton cost for lowering leak definitions not cost effective. The commenters stated that the EPA acknowledges in the preamble that emissions from heat exchange systems have no discernable impact on cancer risk for the modeled facilities and that additional controls for heat exchange systems are not necessary to provide an ample margin of safety.

One commenter requested that the EPA reconsider the cost information submitted on heat exchanger leak repairs in the context of MON, independent of the prior decision made for the Ethylene Production RTR. The commenter said that the EPA's response to their similar comment for the Ethylene Production RTR, that heat exchange systems for ethylene production facilities were not cost effective, was not persuasive. The commenter said that the EPA must consider the entire cost of a heat exchanger repair for the additional/incremental repairs that will be required as a result of lower effective leak definitions and restrictions to the delay of repair provisions; for example, if the current rule requires 4 leaks to be repaired, and the revised rule requires 5 leaks to be repaired, the incremental cost is the entire repair cost for the 5th repair, not a subset of the repair costs, because the current rule would not require the 5th repair at all. In addition, the commenter said they provided a detailed account of several components of repair costs and the range of typical repair costs, yet the EPA did not consider this information in the final rule for the Ethylene Production RTR (signed on March 12, 2020). The commenter also objected to the EPA's response, to similar comments in the pre-publication of the final rule for the Ethylene Production RTR, that the ACC did not provide additional information for the agency to determine the amount of time additional leaks would have to be fixed under the revised heat exchange system standards. The commenter contended that EPA already had sufficient data. The commenter said the EPA based the leak distribution analysis in the technology review memorandum for heat exchange systems at ethylene production facilities on continuous monitoring data from 13 heat exchange systems at six facilities, and the EPA indicated that no leaks in the data were above the current rule threshold; thus, all leaks at the average leak distribution chosen for analysis

that were above the new leak detection threshold would be considered "incremental repairs."

One commenter contended that requiring the Modified El Paso method is not cost effective in all cases. The commenter stated that in certain cases, where soluble type HAP or VOC are the dominant organic species on the process side of the heat exchanger, the current leak detection method (*i.e.*, cooling water sampling to detect leaks) is "adequate," and, therefore, the costs to change to using the El Paso method are "not justified." The commenter explained that mandated conversion of their 56 heat exchanger systems (HES) to the Modified El Paso method would require installation of tubing and taps to set up sampling stations for the El Paso apparatus. The commenter added that where there is not room or access close by the HES, remote stations would have to be established. In order to take the measurements, the commenter stated that an LDAR Method 21 technician must accompany operators to the sampling locations and move the El Paso apparatus from location to location; otherwise, multiple El Paso sampling devices would have to be installed. The commenter contended that the costs associated with the proposed change are not justified when the current method is adequate to detect leaks.

*Response:* The EPA is finalizing the proposed technology review revision under CAA section 112(d)(6) for heat exchange systems to use the Modified El Paso Method, with some minor technical clarifications that are discussed elsewhere in this section of this preamble and in the *Summary of Public Comments and Responses for the Risk and Technology Review for the Miscellaneous Organic Chemical Manufacturing Source Category*, available in the docket for this rulemaking. However, we disagree with commenters who said these proposed revisions are not cost effective. We believe that the developments we identified for heat exchange systems at MON sources are cost effective. We note that the existing MACT standards that were finalized in 2003 contain LDAR provisions; therefore, many of the costs mentioned by commenters (*i.e.*, planning, bypassing, various equipment rental/purchase costs, and costs for scaffolding) are associated with repair costs that would have already been incurred under the existing MACT standards. Also, many of the items associated with cost that are listed by the commenters are not required by the rule, and the commenters did not provide sufficient information

demonstrating why these costs represent an average heat exchange system at a MCPU. For example, facilities may have additional heat exchange system capacity available to them at their facility and may opt to use this capacity to repair the leak, at no additional expense, yet this was not considered by commenters.

Furthermore, because commenters did not provide information sufficient for us to evaluate the percentage of time additional leaks would have to be fixed under the proposed heat exchange system standards compared to the original MACT standards, we continue to believe that the majority, if not all, of the repair costs cited by commenters would have been accounted for and incurred as a result of the original MACT standards and that simply plugging a leaking heat exchanger would more likely represent the average cost additionally incurred by MON sources as a result of this technology review development. In addition, we stated in the proposed rule that we considered a heat exchanger that was leaking to the extent that it needed to be replaced to be effectively at the end of its useful life, so the cost of replacing the heat exchanger would be an operational cost that would be incurred by the facility as a result of routine maintenance and equipment replacement and not attributable to the work practice standard.

Thus, given all of this information, we continue to believe that the only costs that would be additionally incurred by the proposed heat exchange system standards would be costs associated with the difference between doing leak sampling using water sampling methods and leak sampling using the Modified El Paso Method as well as with costs associated with combined operator and maintenance labor to find and repair a leak by plugging it. We also maintain that for almost all MON facilities,<sup>19</sup> the use of the Modified El Paso method is much more sensitive in terms of being able to identify leaks of organic HAP

<sup>19</sup> We are aware of only one MON facility where it is possible that the only HAP that has potential to be present in a heat exchange system is methanol and/or ethylene glycol. In this specific case, the Modified El Paso method may not be as sensitive as water sampling methods; and the owners or operators of this facility could submit more detailed information regarding their specific situation to the EPA and request an alternative test method or an alternative monitoring method pursuant to 40 CFR 63.7(f) and 40 CFR 63.8(f), respectively. Under 40 CFR 63.7(f) and 40 CFR 63.8(f) (in subpart A—General Provisions), a source may apply to the EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures in the final rule or any amendments.

compared to water sampling methods, and monitoring for a single surrogate parameter of organic HAP such as total strippable hydrocarbon can be easily accomplished with a single measurement using a common flame ionization detector (FID).

We note that, based on data collected for ethylene sources, we anticipate that the subsequent leak distribution would reasonably represent implementation of the Modified El Paso Method because it is the average leak distribution of 13 heat exchange systems at 6 ethylene facilities using this method. However, given that the initial leak distribution is based on a heat exchange system employing continuous Modified El Paso monitoring, it is likely that emission reduction estimates are understated given that the average MON facility does not have such readily available information on leaks and would only acquire such information on a quarterly basis using considerably higher leak sensitive test methods. In other words, and as described in more detail in our technology review memorandum for heat exchange systems (see *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which is available in the docket for this rulemaking), the initial leak frequency distribution would likely show considerably higher percentages of larger leaks due to the sensitivity of the current water sampling method requirements in the rule and due to the fact that the dataset was developed from facilities employing continuous monitoring as opposed to less frequent (e.g., quarterly or monthly) monitoring. However, this was the best available data available to the agency, and so we used these conservative estimates. Based on our analysis, we find that the revised standards we proposed for heat exchange systems are cost effective at \$8,530/ton of HAP without consideration of product recovery and the requirement has the potential to lead to a cost savings with product recovery. Therefore, we are finalizing the revisions for heat exchange systems that we proposed under the technology review with some minor technical clarifications that are discussed elsewhere in this document.

We also note, with respect to other rules where we have determined control options to not be cost effective at varying levels of cost effectiveness, that other compelling factors in those rulemaking records likely led the EPA to those determinations and that each rulemaking record is unique and should

be judged based on its own merits. With respect to the two proposed rules commenters cite (i.e., friction materials RTR and petroleum refinery RTR) where the EPA determined certain controls to not be cost effective, the EPA considers a number of rule-specific factors when determining what is, and what is not, cost effective. Regardless, and as stated above, we believe that the developments we identified for heat exchange systems at MON sources are cost effective, and we are finalizing these revisions under our CAA section 112(d)(6) authority.

*Comment:* Two commenters recommended the EPA revise the heat exchange system requirements to include an alternative mass-based leak definition because it would reduce the overall costs of the final rule. The commenters argued that by only defining a leak on a concentration basis, smaller facilities with lower heat exchange system recirculation rates would be forced to identify and fix leaks with a much lower potential HAP emissions rate than facilities with larger recirculation systems. The commenters provided the EPA with survey results showing that 69 heat exchange systems subject to the MON rule have recirculation flowrates between 200 gpm and 80,000 gpm, except for four systems that have a flowrate greater than 80,000 gpm and that the average cooling water flow rate is 43,500 gpm. Based on this information, the commenters suggested the EPA establish an alternative leak action level of 1.6 pounds per hour of total strippable hydrocarbon and a delay of repair action level of 16 pounds per hour of total strippable hydrocarbon for systems with a recirculation flowrate less than or equal to 40,000 gpm. Another commenter said that the EPA must reduce the leak definition and aim to achieve zero leaks. The commenter also supported the use of the Modified El Paso Method, pointing out that in the Ethylene Production RTR, the EPA found that at least 20 heat exchange systems (at eight facilities) are already required by TCEQ's HRVOC rule to conduct continuous Modified El Paso Method monitoring.

*Response:* We agree with commenters that an alternative mass-based leak action level is warranted (in lieu of a concentration-based leak action level) and that, by not finalizing such an alternative, smaller heat exchange systems with low recirculation rates would be disproportionately affected and forced to repair leaks with a much lower potential HAP emissions rate than facilities with larger recirculation rate systems. As commenters allude to, the goal of this alternative is to avoid

disproportionally impacting small heat exchange systems with low emissions potential. To that end and given that this is a technology review under CAA section 112(d)(6), consideration of where it is cost effective to repair a leaking heat exchange system is a consideration for this alternative mass-based leak action level. In the technology review memorandum, *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, available in the docket for this rulemaking, we determined that the nationwide impacts for HAP cost effectiveness (without consideration of product recovery) at \$8,530/ton of HAP would be the HAP cost effectiveness for an average heat exchange system in the source category that has a recirculation rate of approximately 14,000 gpm. We also generally consider technology review developments to be near the upper end of acceptable cost effectiveness for organic HAP if the cost effectiveness is approximately \$10,000/ton (or approximately 1.2 times higher than the cost effectiveness estimated for the average heat exchange system at MON sources). Since the recirculation rate directly correlates to mass emissions potential at the same leak concentration, the mass emissions for a heat exchange system with recirculation rate of 10,000 gpm or less (rounded to one significant figure) would be at least 1.2 times smaller compared to a 14,000 gpm recirculation rate system, and the annual costs to find and repair leaks would not change. As such, we determined that heat exchange systems with a recirculation rate of 10,000 gpm or less would be less cost effective to monitor and repair because the HAP cost effectiveness would be approximately \$10,000/ton of HAP or more. Therefore, to alleviate the concern about disproportionately impacting small heat exchange systems with low HAP emissions potential, and to ensure our technology review developments are cost effective for all heat exchange systems in the source category, we are finalizing an alternative total hydrocarbon mass-based emissions rate leak action level (as methane) of 0.18 kilograms per hour (0.4 pounds per hour) for heat exchange systems in the Miscellaneous Organic Chemical Manufacturing source category that have a recirculation rate of 10,000 gpm or less. We also agree that for consistency, and to not disproportionately impact small heat exchange systems, an alternative mass-based leak action level

of 1.8 kilograms per hour (4.0 pounds per hour) for delay of repair for heat exchange systems with a recirculation rate of 10,000 gpm or less is warranted.

#### c. Process Vents, Storage Tanks, Transfer Racks, and Wastewater Streams

*Comment:* Commenters supported the EPA's conclusion under the technology review that there are no cost-effective technology developments for process vents, storage tanks, transfer racks, and wastewater streams.

*Response:* We acknowledge the commenters' support for the EPA's technology review conclusions.

#### 4. What is the rationale for our final approach for the technology review?

Our technology review focused on the identification and evaluation of developments in practices, processes, and control technologies that have occurred since the MON standards were originally promulgated on November 10, 2003 (68 FR 63852), and further amended on July 1, 2005 (70 FR 38562), and July 14, 2006 (71 FR 40316). Specifically, we focused our technology review on all existing MACT standards for the various emission sources in the Miscellaneous Organic Chemical Manufacturing source category, including, storage vessels, process vents, transfer racks, equipment leaks, wastewater streams, and heat exchange systems. In the proposal, we identified cost-effective developments only for equipment leaks and heat exchange systems, and we proposed to revise the standards for these two emissions sources under the technology review. We did not identify developments in practices, processes, or control technologies for process vents, transfer racks, storage tanks, and wastewater streams. Further information regarding the technology review can be found in the proposed rule (84 FR 69182, December 17, 2019) and in the supporting materials in the rulemaking docket at Docket ID No. EPA-HQ-OAR-2017-0357.

During the public comment period, we received several comments on our proposed determinations for the technology review. The comments and our specific responses and rationale for our final decisions can be found in section IV.B.3 of this preamble and in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking. No information presented by commenters has led us to change our proposed determination under CAA section 112(d)(6) for process

vents, transfer racks, storage tanks, and wastewater streams, and we are finalizing our determination that no changes to these standards are warranted. However, substantive information was submitted by commenters on proposed revisions for equipment leaks. Based on these comments, we are finalizing revisions for equipment leaks and making some technical clarifications to clarify that the initial monitoring of equipment is only required if the new or replaced equipment is subject to Table 6 to 40 CFR part 63, subpart FFFF, and is also subject to periodic monitoring with Method 21 of appendix A-7 to 40 CFR part 60 and that the initial monitoring does not apply to equipment classified as unsafe-to-monitor or difficult-to-monitor equipment. In addition, substantive information was also submitted by commenters on proposed revisions for heat exchange systems, and based on this information, we are finalizing revisions to require the Modified El Paso Method for heat exchange systems. We are also making some technical clarifications to allow compliance with the Modified El Paso Method using an alternative mass-based leak action level instead of a concentration-based leak action level for small heat exchange systems with a recirculation rate of 10,000 gpm or less.

#### C. Amendments Pursuant to CAA Section 112(d)(2) and (3) and 112(h) for the Miscellaneous Organic Chemical Manufacturing Source Category

##### 1. What did we propose pursuant to CAA section 112(d)(2) and (3) and 112(h) for The Miscellaneous Organic Chemical Manufacturing source category?

Under CAA sections 112(d)(2) and (3) we proposed to amend the operating and monitoring requirements for a subset of flares in the Miscellaneous Organic Chemical Manufacturing source category. We proposed that the subset of flares include flares in the Miscellaneous Organic Chemical Manufacturing source category that either (1) control ethylene oxide emissions, (2) control emissions from processes that produce olefins, or (3) control emissions from processes that produce polyolefins. In our proposal, we also proposed that flares controlling propane dehydrogenation (PDH) processes be included in the specified subset since the PDH process produces olefins such as propylene. We also proposed at 40 CFR 63.2535(m) to clarify that owners or operators of flares that are not considered to be in the specified subset but are subject to the

flare provisions of 40 CFR 60.18 or 63.11 may elect to comply with the new proposed flare standards in lieu of the provisions of 40 CFR 60.18 or 63.11.

We proposed at 40 CFR 63.2450(e)(5) to directly apply the petroleum refinery flare rule requirements in 40 CFR part 63, subpart CC, to the flares in the specified subset with clarifications, including, but not limited to, specifying that several definitions in 40 CFR part 63, subpart CC, that apply to petroleum refinery flares also apply to the flares in the specified subset, adding a definition and requirements for pressure-assisted multi-point flares, and specifying additional requirements when a gas chromatograph or mass spectrometer is used for compositional analysis. Specifically, we proposed to retain the General Provisions requirements of 40 CFR 63.11(b) and 40 CFR 60.18(b) such that flares in the specified subset operate pilot flame systems continuously and that these flares operate with no visible emissions (except for periods not to exceed a total of 5 minutes during any 2 consecutive hours) when the flare vent gas flow rate is below the smokeless capacity of the flare. We also proposed to consolidate measures related to flare tip velocity and new operational and monitoring requirements related to the combustion zone gas for flares in the specific subset. Further, in keeping with the elimination of the SSM exemption, we proposed a work practice standard related to the visible emissions and velocity limits during periods when a flare in the specified subset is operated above its smokeless capacity (e.g., periods of emergency flaring). We proposed eliminating the cross-references to the General Provisions and instead specifying all operational and monitoring requirements that are intended to apply to the flares in the specified subset in the MACT standards.

In addition, we proposed provisions and clarifications for periods of SSM and bypasses, including PRD releases, bypass lines on closed vent systems, maintenance activities, and certain gaseous streams routed to a fuel gas system to ensure that CAA section 112 standards apply continuously, consistent with *Sierra Club v. EPA* 551 F. 3d 1019 (D.C. Cir. 2008). For PRD releases, we proposed definitions at 40 CFR 63.2550 of “pressure release,” “pressure relief device,” and “relief valve” and under CAA section 112(h) we proposed a work practice standard for PRDs at 40 CFR 63.2480(e)(3), (6), and (7) that consists of using at least three prevention measures and performing root cause analysis and corrective action in the event that a PRD

does release emissions directly to the atmosphere. (Examples of prevention measures include flow indicators, level indicators, temperature indicators, pressure indicators, routine inspection and maintenance programs or operator training, inherently safer designs or safety instrumentation systems, deluge systems, and staged relief systems where the initial PRD discharges to a control system.) We proposed that PRDs in ethylene oxide service may not vent directly to atmosphere. We also proposed to require that sources monitor PRDs that vent to atmosphere using a system that is capable of identifying and recording the time and duration of each pressure release and of notifying operators that a pressure release has occurred. We proposed at 40 CFR 63.2480(e)(4) that PRDs that vent through a closed vent system to a control device or to a process, fuel gas system, or drain system must meet minimum requirements for the applicable control system. In addition, we proposed at 40 CFR 63.2480(e)(5) that the following types of PRDs would not be subject to the work practice standard for PRDs that vent to the atmosphere: (1) PRDs with a design release pressure of less than 2.5 pounds per square inch gauge (psig); (2) PRDs in heavy liquid service; (3) PRDs that are designed solely to release due to liquid thermal expansion; and (4) pilot-operated and balanced bellows PRDs if the primary release valve associated with the PRD is vented through a control system. Finally, we proposed at 40 CFR 63.2480(e)(8) to require future installation and operation of non-flowing pilot-operated PRDs at all affected sources.

For bypass lines on closed vent systems, we proposed at 40 CFR 63.2450(e)(6) that an owner or operator may not bypass the air pollution control device (APCD) at any time, and if a bypass is used, then the owner or operator must estimate and report the quantity of organic HAP released. We proposed and are taking final action on this revision because bypassing an APCD could result in a large release of regulated organic HAP to the atmosphere (the removal efficiency required by the MON ranges from 95 to 99.9 percent, depending on the type of emission source). The MON requirements we are finalizing thus provide the Agency with the information necessary to evaluate these incidents and determine whether enforcement action is necessary to address such releases to ensure they do not recur. We are also taking final action to allow the use of a cap, blind flange,

plug, or second valve on an open-ended valve or line to prevent a bypass. For these reasons, we maintain that the MON as revised is consistent with *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), because the rule requires compliance with emission standards at all times as required by CAA section 112(d) and because the rule includes sufficient monitoring, recordkeeping and reporting requirements to allow the EPA to evaluate and address any unauthorized releases of HAP emissions.

For maintenance activities, we proposed a work practice standard at 40 CFR 63.2455(d)(1) requiring that, prior to opening process equipment to the atmosphere, the equipment must either (1) Be drained and purged to a closed system so that the hydrocarbon content is less than or equal to 10 percent of the LEL; (2) be opened and vented to the atmosphere only if the 10-percent LEL cannot be demonstrated and the pressure is less than or equal to 5 psig, provided there is no active purging of the equipment to the atmosphere until the LEL criterion is met; (3) be opened when there is less than 50 lbs of VOC that may be emitted to the atmosphere; or (4) for installing or removing an equipment blind, depressurize the equipment to 2 psig or less and maintain pressure of the equipment where purge gas enters the equipment at or below 2 psig during the blind flange installation, provided none of the other proposed work practice standards can be met. For cases where an emission source is required to be controlled in the MACT standards but is routed to a fuel gas system, we proposed that any flare receiving gases from that fuel gas system derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, and utilizing fuel gas whereby the majority (i.e., 50 percent or more) of the fuel gas in the fuel gas system is derived from an MCPU, comply with the proposed flare operating and monitoring requirements.

More information concerning our proposed requirements under CAA section 112(d)(2) and (3) and 112(h) can be found in section IV.A of the proposal preamble (84 FR 69182, December 17, 2019).

2. How did the revisions pursuant to CAA section 112(d)(2) and (3) and 112(h) change since proposal?

The EPA is finalizing the revisions to the monitoring and operational requirements for flares, as proposed, except that we are not finalizing the work practice standard for velocity exceedances for flares operating above

their smokeless capacity. We are also clarifying in the final rule that a “flare that controls ethylene oxide emissions” is a flare that controls ethylene oxide emissions from affected sources in ethylene oxide service as defined in 40 CFR 63.2550. In addition, we are clarifying in the final rule that “an MCPU that produces olefins or polyolefins” include only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product; by-products and impurities as defined in 40 CFR 63.101, as well as wastes and trace contaminants, are not considered products.

Also, we are adding a separate degassing standard in the final rule at 40 CFR 63.2470(f) for storage vessels subject to control requirements based on comments that owners or operators have historically considered degassing emissions from shutdown of storage vessels to be covered by their SSM plans per 40 CFR 63.63.2525(j) and relied on the language in 40 CFR 63.6(e)(1) and 40 CFR 63.2450(a)(1) that back-up control devices are not required. The standard requires owners or operators to control degassing emissions for floating roof and fixed roof storage vessels until the vapor space concentration is less than 10 percent of the LEL. Storage vessels may be vented to the atmosphere once the storage vessel degassing concentration threshold is met (*i.e.*, 10-percent LEL) and all standing liquid has been removed from the vessel to the extent practical.

3. What key comments did we receive on the proposal revisions pursuant to CAA section 112(d)(2) and (3) and 112(h), and what are our responses?

This section provides comment and responses for the key comments received regarding our proposed revisions for flares and clarifications for periods of SSM, including PRD releases and storage vessel emptying and degassing. Other comment summaries and the EPA’s responses for additional issues raised regarding these activities, as well as issues raised regarding our proposed revisions for bypass lines on closed vent systems, maintenance activities, and certain gaseous streams routed to a fuel gas system, can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking.

#### a. Flares

*Comment:* We received comments in support of our proposal to establish similar requirements for flares

(controlling ethylene oxide or emissions from processes that produce olefins and/or polyolefins) used in the Miscellaneous Organic Chemical Manufacturing source category as the flare requirements established in the 2015 Petroleum Refinery NESHAP, including the incorporation of the net heating value of the combustion zone gas (NHVcz) calculation and limits. One commenter said they supported the proposed strengthened operational and monitoring requirements because of the toxic nature of ethylene oxide and the photochemical reactivity of the olefins and polyolefins emissions.

Another commenter cited various enforcement cases where the EPA found flare efficiency problems and applied flare operational and monitoring improvements to chemical plants. The commenter said that because MON sources do not currently have separate flare management plan requirements (as refineries do under CAA section 111 NSPS standards), it is particularly important and necessary for the EPA to update the flare requirements in this rule to assure that flares are working correctly to reduce HAP emissions. Also, the commenter reiterated the EPA’s determination that measuring the net heating value of the flare gas, as it enters the flares, is insufficient to determine combustibility because facilities add steam and other gases not accounted for and that flare performance data shows that the net heating value of vent gas in the combustion zone must reach at least 270 British thermal units per standard cubic foot (Btu/scf). Some commenters also supported the EPA’s proposal “that owners or operators may use a corrected heat content of 1,212 Btu/scf for hydrogen, instead of 274 Btu/scf, to demonstrate compliance with the NHVcz operating limit,” because the data show that the control efficiency of a flare drops off significantly below this level. However, the commenters also suggested other improvements to the proposed flared revisions. The commenters recommended that the EPA also consider the following measures to help assure compliance with 98-percent destruction efficiency and said that these measures should be evaluated under CAA section 112(d)(6).

- Revise the standards to account for “developments” that improve emissions controls by eliminating or drastically reducing routine flaring, such as augmented flare capacity;
- The HAP emission rates from flares during malfunctions when process gases are routed to flares from process equipment should not be less stringent

than the emission limits that apply to such units during normal operations.

- Set further limits on routine flaring that comply with CAA section 112(d)(2) and (3), and 112(f).

- Require continuous video monitoring and recording for flares equipped with video monitoring and flares that vent more than 1 million scf per day.<sup>20</sup>

- Set limits on flaring that require flare gas recovery and other steps to reduce regular and routine flaring.

*Response:* Except for minor clarifications discussed in the response to comment document for this rulemaking, the EPA is finalizing the flare operational and monitoring requirements at 40 CFR 63.2450(e)(5), as proposed, as supported by several commenters. We disagree with one commenter’s request that we mandate additional measures to ensure 98-percent flare destruction efficiency on top of those being finalized in this action under our CAA section 112(d)(2) and (3) authority. Flares are one of many APCDs that owners or operators of MCPUs can use to control HAP emissions from the Miscellaneous Organic Chemical Manufacturing source category and are not specific affected emission sources in the Miscellaneous Organic Chemical Manufacturing source category; thus, the flare requirements we are finalizing are already designed to ensure flares meet a minimum destruction efficiency of 98 percent, consistent with the MACT control requirements.

We disagree with commenters that we should impose the additional measures for flares under our CAA section 112(d)(6) authority because the revisions to the flare requirements are associated with compliance with the MACT standards established pursuant to CAA sections 112(d)(2) and (3). The rulemaking record contains the analyses on options we analyzed for our technology review, and owners or operators of MCPUs can choose from a variety of APCDs to demonstrate

<sup>20</sup> Commenter provided the following reference: See 84 FR 54296; BAAQMD sec. 12–11–507: Requiring continuous video monitoring and recording for flares equipped with video monitoring and flares with vent gas more than 1 million scf/day; SCAQMD Rule 1118(g)(7): Requiring continuous video monitoring and recording; Consent Decree, *United States of America v. Marathon Petroleum Company LP et al.*, No. 12–cv–11544 (E.D. Mich.) (April 5, 2012); Consent Decree, *United States of America et al. v. BP Products North America Inc.*, No. 12–cv–0207 (N.D. Ind.) (May 23, 2012); Consent Decree, *United States of America v. Shell Oil Company et al.*, No. 13–cv–2009 (S.D. Tex.) (July 10, 2013); Consent Decree, *United States of America v. Flint Hills Resources Port Arthur, LLC*, No. 14–cv–0169, at 12 (E.D. Tex.) (March 20, 2014).

compliance with the underlying MACT standards. Notably the commenter does not recommend similar actions to minimize or eliminate the use of thermal oxidizers, carbon absorbers, or other control devices that may be employed to control HAP emissions from the affected emission sources at an MCPU. Eliminating the routine use of flares as an acceptable APCD would only increase the use of these other types of APCD (at potentially significant cost) without any net emissions reductions from the MCPU (provided that the flare is meeting the required control efficiency). In addition, flare gas recovery has not been demonstrated at MCPU in the Miscellaneous Organic Chemical Manufacturing source category, and commenters did not provide sufficient information about requiring use of such systems specific to this source category.

We disagree with the commenter's specific request to require continuous video monitoring and recording for flares equipped with video monitoring and flares that vent more than 1 MMscf/day. We are not removing the requirement to conduct EPA Method 22 monitoring because it has always been required for flares; however, because EPA Method 22 does not allow the use of a video camera, we have provided for the use of video camera surveillance monitoring in the final rule as an alternative to EPA Method 22 monitoring. Observation via the video camera feed can be conducted readily throughout the day and will allow the operators of the flare to watch for visible emissions at the same time they are adjusting the flare operations. We note that in order for an owner or operator to be able to use the video camera surveillance monitoring option, the owner or operator must continuously record (at least one frame every 15 seconds with time and date stamps) images of the flare flame at a reasonable distance above the flare flame and at an angle suitable for visual emissions observations. The owner or operator must also provide real-time video surveillance camera output to the control room or other continuously manned location where the camera images may be viewed at any time.

Lastly, with respect to consent decrees cited by the commenter, we note that the requirements in consent decrees are negotiated settlements and are not based on any analysis required in CAA section 112 and do not factor in nationwide impacts specific to a source category of concern, which in this case is the Miscellaneous Organic Chemical Manufacturing source category.

*Comment:* Commenters requested the EPA clarify in 40 CFR 63.2450(e)(5) that the requirements only apply to (1) flares controlling emissions from sources in ethylene oxide service as defined in 40 CFR 63.2550 and (2) flares used as an APCD to comply with the emission limits and work practice standards in Tables 1, 2, 4, and 5 to 40 CFR part 63, subpart FFFF, for emission sources located at MCPUs that produce olefins and/or polyolefins. A commenter said that the introductory language in 40 CFR 63.2450(e)(5) is ambiguous and appears to indicate that a flare that controls any amount of ethylene oxide or any amount of other HAP from olefins or polyolefins production processes would be subject to the proposed requirements. In addition, the commenter requested that the EPA limit the applicability of the revised provisions to those MCPUs producing lighter olefins and polyolefins and that heavy olefin (e.g., hexene) and heavy polyolefin (e.g., polybutene) production should be excluded because heavier materials used in such processes have much less potential to be flared. The commenter requested that the EPA define the phrase "MCPUs that produce olefins or polyolefins" and said that MCPUs may generate olefins or polyolefins as a by-product or impurity and these small amounts of materials do not justify the compliance costs associated with meeting the new flare requirements. The commenter recommended the EPA adopt definitions similar to those for "Product, By-product," and "Impurity" found in the HON (i.e., 40 CFR 63.101).

Other commenters said the EPA must apply the proposed flare improvements to all MON flares, not just the subset that controls ethylene oxide and emissions from olefin/polyolefin processes. One commenter said that the refinery flare requirements, as proposed, will only apply to 16 of 145 flares in the source category and reiterated that this is less than 10 percent of the flares in the Miscellaneous Organic Chemical Manufacturing source category. The commenter said the EPA did not sufficiently explain why the flare improvements should not be applied to all MON flares.

*Response:* First, as a general matter, the Miscellaneous Organic Chemical Manufacturing source category broadly encompasses a wide variety of chemical production processes not covered elsewhere under other 40 CFR part 63 NESHAP and, as such, is a "catch all" for a wide variety of processes producing various types of chemical products. The primary goal of applying the new suite of flare requirements to a

certain flare subset is two-fold: (1) To ensure continuous compliance with the MON MACT standards at all times for the largest flare systems in the source category where the Agency has compelling data that show that the flare types and vent gases being controlled (e.g., olefinic vent gases that contain ethylene and/or propylene) could have deteriorated flare performance issues, and (2) to ensure continuous compliance with the MON MACT standards at all times for flare systems controlling ethylene oxide, the cancer risk driving HAP for the source category. In particular, when the EPA reviewed available data about flare APCDs being used in the Miscellaneous Organic Chemical Manufacturing source category and the potential for deteriorated combustion efficiencies to occur during certain modes of operation (e.g., over-assisting steam-assisted flares), we determined that vent gases consisting of olefinic material can be over-assisted and that flare performance for these types of MCPUs could be diminished (i.e., consistent with the passive fourier transfer infrared spectrometry (PFTIR) test data reviewed and that formed the basis of the Petroleum Refinery requirements at 40 CFR part 63, subpart CC, we cross-reference in this final rule for the MON). In addition, the EPA has recently reviewed and approved a number of AMEL requests from MON facilities that produce olefins/polyolefins, and this subset of facilities in the Miscellaneous Organic Chemical Manufacturing source category comprises the largest flare systems in the source category, making issues of deteriorated flare performance of particular concern. With respect to flares controlling emissions of ethylene oxide, the EPA also wanted to ensure that these flare systems would be subject to more stringent compliance assurance requirements to ensure over-assisting does not occur for these flare types given risks associated with ethylene oxide in the source category. Thus, these two criteria were chosen to constitute the basis of our flare subset given both the data before us and the concern for potential risk issues if deteriorated flare performance were to occur for flares controlling emissions of ethylene oxide from the source category. Given that we do not have sufficient data about the types of flares and flare vent gases that the other various MCPUs outside the flare subset would be controlling, we are unable to determine whether the new suite of flare requirements would be necessary or warranted as the existing suite of flare requirements may be sufficient for these

other flares. Commenters did not provide the Agency with any information about this, including test data, flare vent gas characteristics, and specific instances of deteriorated flare performance for flares outside the flare subset, thus we disagree that we should broadly apply these new flare requirements to all flares in the source category without this information. We note, however, that we proposed and are finalizing as an alternative that owners or operators of flares outside the flare subset may opt to comply with the new suite of flare requirements should they choose.

With respect to comments requesting the EPA to clarify what was meant when referring to production of olefins and/or polyolefins, we are adding a definition for “MCPUs that produce olefins or polyolefins” for purposes of the new suite of flare requirements only and clarifying that these MCPUs include production of ethylene, propylene, polyethylene, and polypropylene given that these are the largest flare systems in the Miscellaneous Organic Chemical Manufacturing source category and because they are controlling olefinic vent gases that contain ethylene and propylene, which have been shown in our data to exhibit certain operating scenarios where over-assisting and deteriorated flare performance could occur.

Lastly, we agree with commenters that the language at 40 CFR 63.2450(e)(5) could be construed as ambiguous for purposes of controlling ethylene oxide emissions. As such, we are clarifying in the rule text that our intent was to control all emissions generated from affected sources “in ethylene oxide service,” as that term is defined in the final rule.

*Comment:* We received comments in support of and against the proposed work practice requirements for visible emissions and flare tip velocity. One commenter said that MON flares operate similarly to refinery flares in that MON flares are typically designed with a “smokeless capacity” for normal operations and a “hydraulic load capacity” to handle large volumes of flare gas in an emergency. The commenter said that it was reasonable for the EPA to use smoking and tip velocity events reported for ethylene production and refineries to develop emergency flaring provisions for the Miscellaneous Organic Chemical Manufacturing source category because the data on the number of visible emissions events and velocity exceedances for MON flares are not comprehensive of all MON facilities in the subset identified by the EPA.

However, the commenter said that because ethylene flares are twice as likely to have visible emissions events as refinery flares, and because it is reasonable to use smoking event data for ethylene flares to represent MON flares, the EPA should set the backstop for the work practice standard to 6 smoking events in 3 years for MON flares in the identified subset.

Another commenter objected to the EPA’s proposed emergency flaring provisions for smoking flares and said that the provisions are arbitrary and capricious because they do not meet the requirement from CAA section 112(h) that work practice standards be consistent with CAA section 112(d)(2) and (d)(3). The commenter argued that the EPA’s assumption regarding the frequency of emergency flaring events using events at refineries and ethylene production facilities does not satisfy the requirement in CAA section 112(d)(2) that the Administrator “determine” what is achievable regarding the frequency of emergency flaring events. The commenter said the EPA’s reliance on data from refineries and ethylene production facilities, and lack of analysis of the frequency of emergency flaring events at MON facilities, means that the exemption provision violates the CAA section 112(d) requirement that the EPA determine what is achievable for sources “in the category or subcategory to which such emission standard applies.” The commenter requested that the EPA remove the emergency flaring provisions because the EPA needs to collect data from MON sources to set a standard that could satisfy CAA section 112(d)(2) and (d)(3).

In addition, the commenter said that even though the visible emission exemption at issue is for smoking flare events when flares are operating above their smokeless capacity, the EPA (in the present proposed rule, as well as in its analyses regarding refinery and ethylene production flares) only reached conclusions and analyzed data regarding what is achievable for smoking flare events regardless of whether the flares were operating above or below their smokeless capacity. The commenter argued that the EPA has not determined what is achievable for flares when operating above their smokeless capacity. The commenter also said the EPA has not performed any analysis of how often the best performers would exceed flare tip velocity limits when operating above smokeless capacity, and the EPA has only purported to analyze smoking flare events (without regard to whether the events occurred above smokeless capacity). The commenter stated that the EPA also ignored data

that contradict its conclusion regarding the exemption allowing flare tip velocity events because the ACC data that the EPA relied upon to establish the emergency flaring exemption in the ethylene production proposal reported no tip velocity events among any of the 45 flares from the ACC survey. The commenter contended that the ACC data suggest that the best performing flares (at least at ethylene production facilities) would have zero tip velocity exceedances over three years, meaning that the EPA’s conclusion that the best performers would have one or two exceedances over that same period is arbitrary and capricious and contrary to CAA section 112(d). The commenter stated that, unlike the MON proposed rule, the EPA finalized in the Ethylene Production RTR rulemaking the requirement that the maximum flare tip velocity operating limit applies at all times.

*Response:* We are taking final action on the proposed work practice requirements for visible emissions and flare tip velocity as several commenters suggested. We disagree that we should set the backstop for the work practice standard to 6 smoking events in 3 years for MON flares in the identified subset. The commenter did not provide enough data (*i.e.*, information on visible emissions from MON flares in the identified subset) for the EPA to justify revising the proposed requirements. We also disagree with another commenter that we did not analyze the frequency of emergency flaring events at MON facilities and that reliance on data from refineries and ethylene production facilities means that the exemption provision violates the CAA section 112(d) requirement that the EPA determine what is achievable for sources “in the category or subcategory to which such emission standard applies.” We contend that the data used in our analysis represents the best available data available to the agency for the Miscellaneous Organic Chemical Manufacturing Source Category. As stated in our technical memorandum, *Control Option Impacts for Flares Located in the Miscellaneous Organic Chemical Manufacturing Source Category*, available in the docket for this rulemaking (see Docket Item No. EPA–HQ–OAR–2018–0746–0006), although ACC provided some information about visible emissions events and velocity exceedances for MON flares, the data are not comprehensive of all MON flares in the identified subset. Therefore, we did not use the ACC data to determine the number of smoking and tip velocity events that we used in our analysis for

the Miscellaneous Organic Chemical Manufacturing source category, but rather this information is based on smoking and tip velocity events reported for two different source categories (refineries and ethylene production). Best performing flares at refineries have events once every 6 years, and ethylene flare best performers have events once every 7 years. We noted that some flares control process gases from both the Miscellaneous Organic Chemical Manufacturing source category and from the Ethylene Production source category at the same facility. Therefore, we surmised that it is likely that MON flares in the identified subset would have a visible emissions event between every 6 and 7 years. As a conservative approach, we then concluded the best performing MON flares in the identified subset have a visible emissions event once every 7 years. Even if the best-performing flare “typically” only has one event every 7 years, the fact that visible emissions events are random by nature (unpredictable, not under the direct control of the owner or operator) makes it difficult to use a short term time span to evaluate a backstop to ensure an effective work practice standard. Thus, when one considers a longer time span of 20 years, our analysis shows that 3 smoking events in 3 years would appear to be “achievable” for the average of the best performing flares. That said, we do acknowledge that the data we received from ACC’s survey from the Ethylene Production source category identifies zero exceedances of the flare tip velocity during a smoking event. Also, the MON-specific data that ACC provided is limited to only one MON facility, of which 44 of these events were associated with pressure-assisted flares, and no velocity events were reported by any other MON site. Thus, we agree with the commenter that our proposed determination of the frequency of these velocity events at the best performing sources is not supported, and we are not finalizing the proposed work practice standard for when the flare vent gas flow rate exceeds the smokeless capacity of the flare and the tip velocity exceeds the maximum flare tip velocity operating limit. Instead, we are finalizing provisions that require compliance with the maximum flare tip velocity operating limit at all times, regardless of whether the flare is operating above its smokeless capacity.

#### b. PRDs

*Comment:* Several commenters supported the PRD work practice requirements, agreeing it is technically and economically infeasible to establish

emission limitations for PRDs that are not designed to vent through a control system. The commenters added that the EPA’s approach meets their obligations under CAA section 112. One commenter noted that even states that have stringently regulated PRDs, such as California, have not established numerical emissions limits. The commenter added that because these events are triggered by a variety of non-routine process conditions across a variety of different processes, there is no MACT-level technology that can be applied to this category of PRDs to limit emissions to a certain quantity or concentration. The commenter noted that the MACT requirements should be consistent with other regulatory obligations such as the OSHA Process Safety Management (PSM) program and the EPA CAP program.

Another commenter contended that work practice standards are only allowed in lieu of numerical emission standards under narrow circumstances, and the EPA may not set work practice standard unless the EPA determines that the pollutant cannot be emitted “through a conveyance designed and constructed to emit or capture such pollutant” or that “application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.” The commenter added that even when the EPA sets a work practice standard, such a standard must require the “maximum” degree of emission reduction “achievable” and still be consistent with section 112(d)(2) and (3) to apply continuously. The commenter added that work practice standards for PRDs are not allowed because traditional emission restrictions are feasible to restrict the excess emissions the EPA seeks to authorize. The commenter noted that CAA section 112(h) requires the EPA to make a very specific finding that numeric emissions are infeasible, and the EPA has not satisfied that requirement for PRDs. The commenter claimed that the EPA’s assertion that emissions cannot be measured is contradicted by its requirement that sources calculate their emissions during any PRD release to the atmosphere, and the EPA’s reporting and recordkeeping requirements mandate facilities “calculate the quantity of organic HAP released during each pressure release event.” The commenter also noted that local jurisdictions require monitoring to measure such releases.

A commenter contended that because PRDs at MON sources are currently uncontrolled, the EPA must set a standard that satisfies CAA section

(d)(2) and (3) and reflects what the relevant best-performing existing sources have “achieved” and the “maximum achievable degree of emission reduction.” The commenter continued that the EPA must set the floor by assessing the emissions limitation achieved by the best performing 12 percent of existing sources and that cost cannot be considered in setting the MACT floor, per CAA section (d)(3). The commenter contended the EPA must set a zero-emission limit for all PRDs because the best-performing PRDs emit nothing. The commenter stated that in the proposed rule, the EPA has not attempted to evaluate the actual performance of PRDs at MON sources. The commenter added that in the absence of emissions data, the EPA may infer that the MACT floor is at least as stringent as an existing regulatory limit, such as California’s South Coast Air Quality Management District (SCAQMD) and the Bay Area Air Quality Management District (BAAQMD) for similar sources. The commenter noted that both agencies have adopted more stringent emission limitations and leak and repair programs. The commenter also added that the EPA has ample emissions data demonstrating that emissions of at least 12 percent of existing PRDs nationwide reflect at least the use of a well-performing flare. As an example, the commenter stated that the TCEQ data the EPA relied on in the ethylene production rule demonstrated that 23 percent of facilities had no atmospheric releases on a properly operating PRD. Another commenter also said the EPA should evaluate the data that SCAQMD is considering in that rulemaking and further strengthen the requirements for MON sources.<sup>21</sup>

One commenter contended that the EPA did not analyze the cost of construction and installation of continuous monitoring systems in order to measure release events for PRDs that vent to atmosphere. The commenter noted that the EPA’s reporting and recordkeeping requirements mandate facilities “calculate the quantity of organic [hazardous air pollutants] released during each pressure release event” and that a SCAQMD report

<sup>21</sup> Commenter provided the following reference: SCAQMD, Rule and Control Measure Forecast (Mar 6, 2020), <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2020/2020-mar6-016.pdf?sfvrsn=6>, (stating that SCAQMD is considering proposed revisions to “improve the effectiveness, enforceability, and clarity of the rule. Other proposed amendments may be needed to further reduce emissions from operations, implement early leak detection, odor minimization plans, and enhanced emissions and chemical reporting”).

found that “new (wireless) technology allows continuous monitoring of PRDs without significant capital expense and makes it easy for operators to identify valve leaks.” The commenter added that there are multiple vendors of this technology, including one vendor with whom the EPA met during the refineries rulemaking, and this technology is already in use at refineries in the United States. The commenter claimed that refineries have found that implementing this kind of monitoring technology saves money. The commenter added that in the ethylene production rulemaking, the EPA relied on TCEQ data from seven ethylene production facilities that reported the quantity of HAP emissions released during specific PRD release events indicating that not only is it possible to measure PRD emissions, but also that they actually have been measured and that the EPA itself acknowledges this fact.

*Response:* We disagree with some commenters’ assessment that numeric emission limit standards are feasible and must be established for PRDs that vent to the atmosphere. We are finalizing a work practice standard for PRDs, as proposed, that consists of using at least three prevention measures and performing root cause analysis and corrective action in the event that a PRD does release emissions directly to the atmosphere. We also maintain the rationale provided in the proposal preamble (84 FR 69207, December 17, 2019) for this work practice standard, where we specifically considered the issue related to constructing a conveyance and quantitatively measuring PRD releases and concluded that these measures were not practicable and that a work practice standard was appropriate. Owners or operators can estimate the quantity of HAP emissions released during a PRD release event based on vessel operating conditions (temperature and pressure) and vessel contents when a release occurs, but these estimates do not constitute a measurement of emissions or emission rate within the meaning of CAA section 112(h). The monitoring technology suggested by the commenter is adequate for identifying PRD releases and is one of the acceptable methods that facility owners or operators may use to comply with the continuous monitoring requirement. However, we disagree that it is adequate for accurately measuring emissions for purposes of determining compliance with a numeric emission standard. For example, the technology cited by the commenter is a wireless monitor that provides an indication that a PRD release has occurred, but it does

not provide information on either release quantity or composition. PRD release events are characterized by short, high pressure, non-steady state conditions that make such releases difficult to quantitatively measure. As discussed in the proposal preamble (84 FR 69207, December 17, 2019), we have not identified any available, technically feasible CEMS that can accurately determine a mass release quantity of VOC or HAP given the flow, composition, and composition variability of potential PRD releases that vent to the atmosphere from MCPUs. Therefore, it is also economically infeasible at this time to establish emission limitations for PRDs given that no such system exists. As such, we maintain our position that the application of a work practice standard is appropriate for PRDs.

As a general matter, CAA section 112 requires MACT for existing sources to be no less stringent than “the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information) . . .” [(CAA section 112(d)(3)(A)]. “Emission limitation” is defined in the CAA as “. . . a requirement established by the State or Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice, or operational standard promulgated under this chapter” [CAA section 302(k)]. The EPA specifically considers existing rules from state and local authorities in identifying the “emission limitations” for a given source. We then identify the best performers to identify the MACT floor (the no less stringent than level) for that source. The EPA identified the requirements established in the SCAQMD and BAAQMD rules,<sup>22</sup> and the Chemical Accident Prevent Provisions rule (40 CFR part 68) as the basis of the MACT floor because they represented the requirements applicable to the best performing sources. Work practice standards are established in place of a numeric limit where it is not feasible to establish such limits. Thus, in a case such as this, where the EPA has determined that it is appropriate to

establish work practice standards, it was reasonable for the EPA to identify the rules that impose the most stringent requirements and, thus, represent what applies to the best performers, and then to apply the requirements from those rules as MACT.

We recognize that the proposed standard for PRDs did not exactly mirror the SCAQMD, BAAQMD, or Chemical Accident Prevent Provisions rules, but we consider the requirements to be comparable. For example, we did not include a provision similar to that in the SCAQMD rule that excludes releases less than 500 lbs/day from the requirement to perform a root cause analysis; that provision in the SCAQMD rule does not include any other obligation to reduce the number of these events. Similarly, we did not include a provision that only catastrophic PRD releases must be investigated. Rather than allowing unlimited releases less than 500 lbs/day or that are not considered catastrophic, we require a root cause analysis for releases of any size. Because we count small releases that the SCAQMD rule does not regulate at all, we considered it reasonable to provide a higher number of releases prior to considering the owner or operator to be in violation of the work practice standard. We also adopted the three prevention measures requirements in the BAAQMD rule with limited modifications. We also note that a facility cannot simply choose to release pollutants from a PRD; any release that is caused willfully or caused by negligence or operator error is considered a violation.

*Comment:* Two commenters supported subcategorizing PRDs and agreed with the EPA’s rationale for doing so. However, one commenter contended that the EPA has unlawfully categorized PRDs by control (*i.e.*, PRDs that vent through a closed vent system to a control device or to a process, fuel gas system, or drain system and PRDs that vent to the atmosphere). The commenter added that the best-controlled PRDs are routed to processes with no discharge to the environment, and well-controlled PRDs are vented to a control system rather than directly to the atmosphere. The commenter stated that the EPA must determine the appropriate MACT floor for new and existing PRDs based on the best performing PRDs and also require “beyond the floor” options, but because PRDs nationwide reflect at least the use of a control system, the EPA may not establish a limitation that is less stringent than venting to a control system. The commenter contended that because the best-controlled PRDs have

<sup>22</sup> While there are not MON facilities in the SCAQMD or BAAQMD, as stated in the proposal preamble (84 FR 29207), we believe that MON facilities are complying with these rules via company-wide best practices. There are companies that own MON facilities and petroleum refineries, and there are petroleum refineries located in these AQMDs.

no emissions, the EPA must set a zero-emission limit for all PRDs.

One commenter also contended that the EPA did not explain why additional flares cannot be installed by MON facilities to meet a standard prohibiting uncontrolled PRD releases. The commenter stated that the EPA did not estimate the number of new flares that would be installed, based on data of the number of atmospheric PRDs reported at MON facilities.

*Response:* Regarding subcategorization of PRDs, the only information we have available about when PRD releases occur is from those PRDs that release directly to atmosphere (see the technical memorandum, *Review of Regulatory Alternatives for Certain Vent Streams in the Miscellaneous Organic Chemical Manufacturing Source Category*, available in the docket for this rulemaking, see Docket Item No. EPA-HQ-OAR-2018-0746-0010). The work practice standard we are finalizing provides a comprehensive program to manage entire populations of PRDs; includes prevention measures, continuous monitoring, root cause analysis, and corrective actions; and addresses the potential for violations for multiple releases over a 3-year period. We followed the requirements of section 112 of the CAA, including CAA section 112(h), in establishing what work practice constituted the MACT floor. We provide further details on our rationale to develop a work practice standard in previous responses to comments in this section of this preamble and the preamble to the proposed rule.

We disagree with the comment that the EPA did not explain why additional flares could not be installed to control releases from PRDs. We conducted a beyond-the-floor analysis at proposal that examined the option of controlling all PRDs with a control device. 84 FR 69209. As part of this analysis, we estimated for all MON facilities, assuming 25 percent to 50 percent of PRDs already vent to a control device, the capital cost for controlling the remaining PRDs ranges from \$2.54 billion to \$5.07 billion, and the annualized cost ranges from \$330 million to \$660 million. Because the incremental cost effectiveness for requiring control of all PRDs that vent to atmosphere exceeds \$80 million per ton of HAP reduced, the beyond-the-floor option was determined not to be cost-effective. Details of the beyond-the-floor analysis are available in the memorandum, *Review of Regulatory Alternatives for Certain Vent Streams in the Miscellaneous Organic Chemical Manufacturing Source Category*, which is available in the docket for this

rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0010).

*Comment:* We received comments in support of and against the proposed requirements allowing PRDs to discharge to the atmosphere. Some commenters supported allowing a limited number of PRD releases at MON facilities. The commenters supported the EPA's assessment that even at the best performing sources, releases from PRDs are likely to occur and cannot be safely or economically routed to a control device. Two commenters contended there was a wide variety of situations that can trigger a PRD actuation and noted it was impossible to predict which PRDs will release during a given year. One commenter opposed any limit on the number of PRD releases because they are needed for safety reasons. However, the commenter added that if the EPA is going to finalize a limit on the number of authorized PRD venting events, they supported allowing more than one release in a 3 calendar year period.

Two commenters identified several situations where PRDs are designed to vent to the atmosphere instead of a flare or other control device due to safety concerns. One commenter also identified situations where it was technically not possible to collect discharges from PRDs. One commenter supported the EPA's conclusion that it was not cost effective to control all PRDs that vent to the atmosphere.

Another commenter noted that PRDs on process equipment such as distillation columns and steamers are typically intended for emergency venting, and these devices are the last (mechanical) line of defense to avoid over-pressurization situations. The commenter added that pollution control devices are intended for normal process operations and are not commonly designed to handle the flow that would result from an emergency PRD release. The commenter concluded that the capture of releases from emergency over-pressurizations has the potential to create a new hazard.

One commenter opposed allowing PRDs to discharge to the atmosphere. The commenter stated that the EPA cannot use CAA section 112(h) to circumvent the emission standards of equipment connected to PRDs and smoking flares through uncontrolled releases from these devices. The commenter cited the court decision *U.S. Sugar Corp. v. EPA*, 830 F.3d at 608 (D.C. Cir. 2016) that exemptions "cannot be framed in simple numerical terms, as, say, an allowance of four excessive discharges per year," as doing so would give emitters "a license to dump wastes

at will on several occasions annually," and *Weyerhaeuser Co. v. Costle*, 590 F.2d at 1011, 1057 (D.C. Cir. 1978) that "no control" is not a standard—it is an exemption. The commenter continued to cite *Weyerhaeuser Co. v. Costle* that malfunctions and *force majeure* events are appropriately dealt with through "the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation." The commenter contended that finalizing these exemptions would incentivize facilities to install redundant PRDs or flares, and operators could cycle through PRDs, sealing off each one after a release event to avoid repeated violations of the underlying equipment's emission standards. The commenter added that emissions could be routed away from controlling flares to an endless number of cycling pressure release devices resulting in unlimited emissions with no technical violation. The commenter concluded that treating releases from PRDs and smoking flares as violations would incentivize operators to do the planning/maintenance, etc., to eliminate the root causes of these releases.

The commenter stated that allowing PRD releases is not consistent with the technology-forcing requirements from CAA section 112(d) and is arbitrary and capricious. The commenter contended that neither the proposed rule nor the EPA's supporting memorandum regarding the work practice standards for PRD releases to the atmosphere discusses whether the number of uncontrolled releases that would be a violation of the standard reflects what is achievable under CAA section 112(d). The commenter added that the exemption violates CAA sections 112(d) and (h) because the EPA has not analyzed what the best performers can achieve with respect to the number of uncontrolled PRD releases to the atmosphere. The commenter contended that the EPA's conclusions were based on a Monte Carlo analysis of random rare events conducted for the Petroleum Refinery Sector rule, for smoking flare events—not PRD releases. The commenter added that the EPA has conducted no analysis of how often the best performing MON facilities have uncontrolled PRD releases to the atmosphere. The commenter concluded that because the EPA did not analyze the rate of PRD releases at MON facilities, the EPA's exemption for PRD releases to the atmosphere is contrary to CAA section 112(h) in that work practice standards be "consistent with the provisions of subsection (d) or (f)." The commenter noted that CAA section

112(d) mandates that standards require the “maximum” degree of reduction in emissions that the Administrator “determines is achievable” for sources “in the category or subcategory to which such emission standard applies.”

The commenter added that the EPA did not “determine” what is “achievable” for PRDs, as required by CAA section 112(d)(2) through (3), because the EPA only analyzed what is achievable for flares. The commenter contended that PRDs are not flares, and vice versa, and PRDs could release to the atmosphere at much different rates from the rates at which flares have smoking events. The commenter stated that even if the EPA could lawfully and non-arbitrarily base the limit on MON PRD releases to the atmosphere on the rate at which flares at refineries supposedly have smoking events, the industry data and analysis that the EPA relies upon to try to craft the exemption has problems that also render it contrary to statutory requirements and is arbitrary and capricious. The commenter explained that the analysis began by relying on an unsubstantiated industry claim that an American Petroleum Institute and American Fuel & Petrochemical Manufacturers survey of 148 flares (which industry said was around 30 percent of flares) showed that, on average, a flare will have a smoking event once every 4.4 years. The commenter added that working from the unsubstantiated industry rate of one event every 4.4 years, the EPA then just assumed without support that the best performers would have an event once in every six years (*e.g.*, better than the average of once every 4.4 years). The commenter stated that the EPA then used that assumed and unsubstantiated once-per-six-years frequency to conduct its Monte Carlo analysis. The commenter contended that the EPA’s assumption that the best performers would have one event every six years cannot satisfy CAA section 112(d)’s command that the agency determine what the best performers can achieve, nor does that assumption satisfy the requirements that the agency engage in non-arbitrary rulemaking and support its factual determinations with substantial evidence. The commenter also added that the assumptions that the EPA made regarding the rate of PRD releases to the atmosphere in establishing the exemption conflict with the assumptions that the EPA made regarding those releases in calculating the cost for MON facilities to implement the work practice standard, rendering the exemption arbitrary and capricious. The commenter stated that the EPA

based the PRD exemption on an analysis that assumed that the best performing flare would have a 16.7-percent probability of having an event every year, and the cost analysis assumed that only 10 percent of PRDs at MON facilities would have a release every year. The commenter also added that information collected for its recent proposed NESHAP rule for ethylene production facilities showed that only 4.4 percent of PRDs in that source category would release to the atmosphere annually. The commenter stated that the EPA’s cost analysis only looked to the release rates for all PRDs and not the best-performing ones. The commenter stated that the best performers would presumably release to the atmosphere even less frequently. The commenter added that compliance data for refinery PRDs shows that those devices release to the atmosphere far less frequently than the EPA assumes and that the best-performing uncontrolled PRDs are likely to have no atmospheric releases over a 3-year period. Another commenter concluded that the EPA’s proposal to give each uncontrolled PRD one or two free passes before an atmospheric release becomes a deviation is inconsistent with CAA section 112(d)(2) and (3) and arbitrary and capricious. The commenter reviewed some compliance reports from calendar year 2019 for refineries and determined that among the 998 uncontrolled PRDs, there was only one 3-minute release to the atmosphere. The commenter calculated that these 998 uncontrolled PRDs would experience only 7.2 atmospheric releases (or less) over 3 years, and an average of 0.007 (or less) releases per uncontrolled PRD over 3 years. The commenter concluded that the average PRD from the best performers has zero releases to the atmosphere over 3 years.

*Response:* The EPA is taking final action on the proposed PRD work practice standards as requested in a number of comment letters.

We disagree with the commenter that stated that work practice standards are not appropriate for PRD releases in the Miscellaneous Organic Chemical Manufacturing source category. At proposal, the EPA provided extensive discussions on why it was appropriate to establish a work practice standard for PRDs that vent to atmosphere, under CAA section 112(h). 84 FR 69206–69209, December 17, 2019. We explained that no MON facility is subject to numeric emission limits for PRDs that vent to the atmosphere. We posited that it was not appropriate to subject PRDs that vent to the atmosphere to numeric emission limits

due to technological and economical limitations that make it impracticable to measure emissions from such PRDs. We further explained that CAA section 112(h)(1) allows the EPA to prescribe a work practice standard or other requirement, consistent with the provisions of CAA section 112(d) or (f), in those cases where, in the judgment of the Administrator, it is not feasible to enforce an emission standard. Additionally, we explained that CAA section 112(h)(2)(B) defines the term “not feasible” in this context as meaning that “the application of measurement technology to a particular class of sources is not practicable due to technological and economic limitations.” We also noted that the basis of the work practice standards promulgated for PRD releases in the Petroleum Refinery Sector RTR (80 FR 75178, December 1, 2015) were our underlying basis for the proposed work practice standards at MON facilities.

With regard to the comments about the PRDs and the smoking flare requirements being exemptions, we note that CAA section 112 standards apply at all times to PRDs and to flares controlling vent gas streams from affected emission sources at MON facilities. For PRDs, facilities must implement a system consisting of at least three redundant prevention measures to minimize releases and must monitor PRDs for any releases, if they were to occur. For flares, facilities still must comply with the underlying combustion efficiency standards (*e.g.*, NHVcz) to ensure the flare is achieving the level of destruction efficiency required by the underlying MACT standards in the MON.

The comments about facilities continuously installing redundant PRDs or closing up PRDs and opening new ones to be able to have as many PRD events as possible without violating the PRD work practice are hypothetical and the EPA has no information to support such a strategy. In addition, MON facilities must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions, and setting up such a strategy would be inconsistent with the General Duty requirements of 40 CFR 63.2450(u). Also, the part 63 General Provisions contain a circumvention provision at 40 CFR 63.4(b) that states in part that “no owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that

would otherwise constitute noncompliance with a relevant standard.” Thus, a source that took such hypothetical actions as the commenter suggests would be open to an enforcement action for violating the circumvention provision.

The commenter opposed the PRD work practice and provided additional information about PRD releases from Petroleum Refineries. Much of what was provided by the commenter is irrelevant to the final PRD work practice or is insufficient for the Agency to use to update the work practice standards we are finalizing for PRDs at MON facilities. The EPA notes that the PRDs at Petroleum Refineries are already subject to the work practice standards we are finalizing in this action. In setting the refineries work practice, the EPA conducted a Monte Carlo analysis spanning 20 years. Given that the Agency lacks specific PRD release information and smoking flare information for MON sources, we stated in our technology review memorandum at proposal that we would consider information from other source categories like Petroleum Refineries and Ethylene Production facilities when determining what is achievable for the best performing sources in the Miscellaneous Organic Chemical Manufacturing source category and we made reasonable estimates where needed for estimated cost impacts of implementing the work practice standards we are finalizing for these sources. If anything, the refinery compliance report data provided by the commenter show that the work practice standards we finalized for Petroleum Refineries are quite effective at minimizing PRD releases to the atmosphere and should translate to being effective at minimizing emissions from PRD releases at MON facilities as well. As the commenter stated, among the 998 uncontrolled PRDs reported in the compliance reports that were reviewed from calendar year 2019, there was only one three-minute release to the atmosphere.

*Comment:* One commenter disagreed with requiring a root cause analysis and corrective action in every situation in which a PRD releases to the atmosphere. The commenter noted that under the Chemical Accident Prevention Program, an incident investigation with root cause analysis is required only when the release was a catastrophic release or could reasonably have resulted in a catastrophic release. The commenter added that the EPA has not established sufficient evidence to indicate that a root cause analysis is being performed by the best performing sources in the MON category routinely for all PRD

releases regardless of whether they meet the definition of “catastrophic release.”

*Response:* As previously mentioned in this section of this preamble, the work practice standard we are finalizing provides a comprehensive program to manage entire populations of PRDs, includes prevention measures, continuous monitoring, root cause analysis, and corrective actions, and addresses the potential for violations for multiple releases over a 3-year period. Implementing measures such as requiring root cause analysis and corrective action analysis will ensure that the work practice standards are effective and that the best PRD release management practices are followed so that the same events do not recur in the future. The commenter also does not provide any data to support their assertion that the best performers do not conduct a root cause/corrective analysis after a PRD release occurs. We followed the requirements of section 112 of the CAA, including CAA section 112(h), in establishing what work practice constituted the MACT standard for PRDs.

#### c. Degassing Storage Tanks

*Comment:* Several commenters requested that the EPA add a standard for minimizing emissions arising from degassing storage tanks that are complying with the control requirements in Table 4 to 40 CFR part 63, subpart FFFF. A commenter explained this request is due to their current interpretation of the proposed rule, wherein 40 CFR 63.6(e)(1) and 40 CFR 63.2450(a)(1) no longer applies, and thus facilities may be required to vent to control devices at all times, even during degassing events. A commenter stated that the current rule requires facilities to address minimization of emissions from shutdown, which includes degassing, in the SSM plan, and that facilities have historically considered degassing emissions from shutdown of storage tanks to be covered by their SSM plans per 40 CFR 63.6(e)(1) and 40 CFR 63.2450(a)(1) and relied on the language in 40 CFR 63.6(e)(1) and 40 CFR 63.2450(a)(1) that back-up control devices are not required. The commenter requested the EPA subcategorize storage vessel degassing emissions as maintenance vents based on class, just as the EPA proposed for process vents. The commenter contended that the Texas permit conditions presented in the memorandum, *Review of Regulatory Alternatives for Certain Vent Streams in the Ethylene Production Source Category*, available in the docket for this rulemaking, apply equally to both

maintenance vents and degassing of storage tanks and stated these permit conditions reflect what the best performers have implemented for storage tank degassing (for both fixed and floating roofs) for both new and existing sources. According to the commenters, it is not feasible to control all the emissions from the entire storage tank emptying and degassing event, and at some point the storage tank must be opened and any remaining vapors vented to the atmosphere. The commenter further stated that this venting of vapors is similar to the EPA description for maintenance vents in the preamble to the proposed rule.

Another commenter recommended a work practice standard that would require emptying the storage vessel as much as practical allows; and if the storage vessel is required to be controlled in Table 4 to 40 CFR part 63, subpart FFFF, then it would be required to be degassed to a control device, fuel gas system, or process prior to opening to the atmosphere. The commenter also recommended that if the storage vessel is not required to be controlled in Table 4 to 40 CFR part 63, subpart FFFF, then it could be vented to atmosphere after removing as much liquid as practical.

*Response:* We agree with the commenters that complying with the storage tank requirements in Table 4 to 40 CFR part 63, subpart FFFF, is not appropriate during storage tank degassing events and a separate standard for storage tank degassing is necessary, due to the nature of the activity. With the removal of SSM requirements in this final rule, a standard specific to storage tank degassing does not exist when storage tanks are using control devices to comply with the requirements in Table 4 to 40 CFR part 63, subpart FFFF. We also agree with the commenters that storage tank degassing is similar to maintenance vents (e.g., equipment openings) and that there must be a point in time when the storage tank can be opened and any emissions vented to the atmosphere. In response to this comment, we reviewed available data to determine how the best performers are controlling storage tank degassing emissions.

We are aware of three regulations regarding storage tank degassing, two in the state of Texas and the third for the SCAQMD in California. Texas has degassing provisions in the Texas Administrative Code (TAC)<sup>23</sup> and

<sup>23</sup> See 30 TAC Chapter 115, Subchapter F, Division 3, available at [https://texreg.sos.state.tx.us/public/readtac%24ext.ViewTAC?tac\\_view=5&ti=30&pt=1&ch=115&sch=F&div=3&rl=Y](https://texreg.sos.state.tx.us/public/readtac%24ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=115&sch=F&div=3&rl=Y).

through permit conditions (as noted by the commenter),<sup>24</sup> while Rule 1149 contains the SCAQMD degassing provisions.<sup>25</sup> The TAC requirements are the least stringent and require control of degassing emissions until the vapor space concentration is less than 35,000 ppmv as methane or 50 percent of the lower explosive limit (LEL). The Texas permit conditions require control of degassing emissions until the vapor space concentration is less than 10 percent of the LEL or until the VOC concentration is less than 10,000 ppmv, and SCAQMD Rule 1149 requires control of degassing emissions until the vapor space concentration is less than 5,000 ppmv as methane. The Texas permit conditions requiring compliance with 10 percent of the LEL and SCAQMD Rule 1149 control requirements are considered equivalent because 5,000 ppmv as methane equals 10 percent of the LEL for methane.

MON facilities located in Texas are subject to the permit conditions, but no MON facilities are subject to the SCAQMD rule. Of the 201 currently operating MON facilities, 39 are in Texas. Therefore, the Texas permit conditions relying on storage tank degassing until 10 percent of the LEL is achieved reflect what the best performers have implemented for storage tank degassing, and we considered this information as the MACT floor for both new and existing sources. Notably, this also aligns with the commenter's assessment.

We reviewed Texas permit condition 6 (applicable to floating roof storage tanks) and permit condition 7 (applicable to fixed roof storage tanks) for key information that could be implemented to form the basis of a standard for storage tank degassing. The Texas permit conditions require control of degassing emissions for floating roof and fixed roof storage tanks until the vapor space concentration is less than 10 percent of the LEL. The permit conditions also specify that facilities can also degas a storage tank until they meet a VOC concentration of 10,000 ppmv, but we do not consider 10,000 ppmv to be equivalent to or as stringent as the compliance option to meet 10 percent of the LEL and are not including this as a compliance option. We also do not expect the best performers would be using this concentration for compliance, which is supported by the commenters recommending the requirements mimic

the maintenance vent requirements and because the Texas permit conditions allow facilities to calibrate their LEL monitor using methane. Storage tanks may be vented to the atmosphere once the storage tank degassing concentration threshold is met (*i.e.*, less than 10 percent of the LEL) and all standing liquid has been removed from the tank to the extent practicable. These requirements are considered MACT for both new and existing sources, and we are finalizing these requirements at 40 CFR 63.2470(f).

We calculated the impacts due to controlling storage tank degassing emissions by evaluating the population of storage tanks that are subject to control under Table 4 to 40 CFR part 63, subpart FFFF, and not located in Texas. Storage tanks in the Miscellaneous Organic Chemical Manufacturing source category in Texas would already be subject to the degassing requirements, and there would not be additional costs or emissions reductions for these facilities. We estimated there are an average of 9 storage tanks per facility, based on a 2003 memorandum on MON storage tanks, and applied that to the 162 MON facilities that are not located in Texas, resulting in 1,458 storage tanks newly applicable to tank degassing requirements. Based on a review of CAA section 114 survey responses for ethylene production facilities, most storage tanks are degassed an average of once every 14 years. Using this average and the population of storage tanks that are not in Texas, we estimated 104 storage tank degassing events would be newly subject to control each year. Controlling storage tank degassing would reduce HAP emissions by 86 tons per year, with a total annual cost of approximately \$489,000. See the technical memorandum, *Storage Tank Degassing Cost and Emissions Impacts for the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which is available in the docket for this rulemaking, for details on the assumptions and methodologies used in this analysis.

We also considered options beyond-the-floor, but we did not identify and are not aware of storage tank degassing control provisions more stringent than those discussed above and being finalized in this rule; therefore, no beyond-the-floor option was evaluated.

The remaining comments and our specific responses can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical*

*Manufacturing*, available in the docket for this rulemaking.

4. What is the rationale for our final approach and final decisions for the revisions pursuant to CAA section 112(d)(2) and (3)?

We evaluated all of the comments on the EPA's proposed amendments to revisions for flares used as APCDs, clarifications for periods of SSM and bypasses, including PRD releases, bypass lines on closed vent systems, maintenance activities, certain gaseous streams routed to a fuel gas system, and requirements for storage tank degassing activities. For the reasons explained in section IV.A of the proposal preamble (84 FR 69182, December 17, 2019), we find that the flare amendments are needed to ensure that flares used as APCDs achieve the required level of MACT control and meet 98-percent destruction efficiency at all times as well as to ensure that CAA section 112 standards apply at all times. Similarly, the clarifications for periods of SSM and bypasses, including PRD releases, bypass lines on closed vent systems, maintenance activities, certain gaseous streams routed to a fuel gas system, and standards associated with storage tank emptying and degassing events are needed to be consistent with *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008) to ensure that CAA section 112 standards apply at all times. More information and rationale concerning all the amendments we are finalizing pursuant to CAA sections 112(d)(2) and (3) is in the preamble to the proposed rule (84 FR 69182, December 17, 2019), in section IV.C.3 of this preamble, and in the comments and our specific responses to the comments in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, which is available in the docket for this rulemaking. Therefore, we are finalizing the proposed provisions for flares (except that we are not finalizing the work practice standard for velocity exceedances for flares operating above their smokeless capacity), finalizing the proposed clarifications for periods of SSM and bypasses, including PRD releases, bypass lines on closed vent systems, maintenance activities, and certain gaseous streams routed to a fuel gas system, and finalizing standards for storage tank emptying and degassing events.

<sup>24</sup> See <https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mss/chem-mssdraftconditions.pdf>.

<sup>25</sup> See <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1149.pdf>.

#### *D. Amendments Addressing Emissions During Periods of SSM*

1. What amendments did we propose to address emissions during periods of SSM?

We proposed amendments to the MON standards to remove and revise provisions related to SSM that are not consistent with the requirement that the standards apply at all times. In a few instances, we are finalizing alternative standards for certain emission points (*i.e.*, emergency flaring, PRDs, maintenance activities, and tank degassing) to minimize emissions during periods of SSM to ensure a continuous CAA section 112 standard applies “at all times,” (see section IV.C of this preamble); however for the majority of emission points in the Miscellaneous Organic Chemical Manufacturing source category, we proposed eliminating the SSM exemptions and to have the MACT standards apply at all times. More information concerning the elimination of SSM provisions is in section IV.E.1 of the proposal preamble (84 FR 69182, December 17, 2019).

2. How did the SSM provisions change since proposal?

We are finalizing the SSM provisions as proposed (84 FR 69182, December 17, 2019) with only minor changes to sufficiently address the SSM exemption provisions from subparts referenced by the MON standards, and the removal of applicability of 40 CFR 63.6(f)(1) and (h)(1) that are directly impacted by the 2008 Court decision.

3. What key comments did we receive on the SSM revisions and what are our responses?

While we are finalizing some alternative standards in this final rule for certain emission points during periods of SSM to ensure a continuous CAA section 112 standard applies “at all times,” (see section IV.C of this preamble), we also proposed eliminating the SSM exemptions for the majority of emission points in the Miscellaneous Organic Chemical Manufacturing source category. This section provides comment summaries and responses for the key comments received regarding our proposed revisions. Other comment summaries and the EPA’s responses for additional issues raised regarding these activities as well as issues raised regarding our proposed revisions can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical*

*Manufacturing*, available in the docket for this rulemaking.

*Comment:* One commenter stated that the proposed malfunction standards for PRDs break with prior Agency policy regarding malfunctions and the use of case-by-case enforcement discretion to address malfunctions. The commenter stated that the agency has repeatedly explained why case-by-case evaluation of such issues is the only workable approach and has repeatedly finalized prohibitions on uncontrolled releases from PRDs that vent directly to the atmosphere, fully aware that allowing such releases without an emission limit is a malfunction exemption prohibited both by the CAA and the Court’s decision in *Sierra Club*. The commenter objected to this change and contended that the EPA did not clearly explain this break with prior precedent. The commenter noted that the EPA finalized similar provisions prohibiting PRD releases in MACT standards for Group IV Polymers and Resins, Pesticide Active Ingredient Manufacturing, and Polyether Polyols Production. The commenter further stated that the Court recently upheld this type of prohibition in *Mexichem Specialty Resins, Inc. v EPA*, 787 F.3d 544, 560–61 (D.C. Cir. 2015) and urged the EPA to finalize the standards for PRD as proposed. The commenter noted that in light of the EPA’s prior policy, prohibiting uncontrolled PRD releases is lawful and consistent with the CAA. The commenter stated that the EPA has neither provided a reasoned explanation for the exemptions nor acknowledged or explained the break in its prior policy against malfunction exemptions.

Furthermore, the commenter observed that uncontrolled PRD releases are preventable and avoidable and that they need not occur if a facility avoids over-pressure in the system. The commenter referred to the proposal preamble, noting that such “pressure build-ups are typically a sign of a malfunction of the underlying equipment,” and PRDs “are equipment installed specifically to release during malfunctions.” Therefore, the commenter argued that the EPA cannot rely on any argument that equipment can fail, that PRDs are necessary to address over-pressure and avoid a larger safety incident, and that the EPA has not relied on or demonstrated with any evidence that it is a valid concern. The commenter stated that even if it may be considered by the EPA in an administrative enforcement context or by the courts in an enforcement case, the EPA cannot authorize, up front, a whole set of problematic releases.

The commenter argued that it would create a far stronger incentive to reduce smoking flares and uncontrolled PRD releases if the EPA simply recognized that such uncontrolled releases are prohibited and the flare requirements must apply at all times; treating one or two exceedances as a non-violation dramatically reduces the incentive for facilities to comply with the work practice standards.

The commenter also noted that the civil penalties available for such violations could provide some remedy for the air pollution a facility released, even if it were completely out of the facility’s control. For example, the commenter stated that penalties won by a citizen suit may either go into a special fund “to finance air compliance and enforcement activities” that may help to address some part of the pollution or “be used in beneficial mitigation projects which . . . enhance the public health or the environment.”

Other commenters agreed that the EPA has the authority and obligation to adopt work practice standards under the *Sierra Club* SSM decision. The commenters reiterated the *Sierra Club* decision and said the EPA must ensure that some “emission standard” applies at all times—except that the standard that applies during normal operation need not be the same standard for SSM periods. The commenters said the requirement for “continuous” standards means only that a facility may not install control equipment and then turn it off when atmospheric conditions are good; it does not mean that work practice standards must physically restrict emissions from all equipment at all times. The commenters said that the EPA has consistently imposed as “MACT” standards a variety of work practice obligations that do not prohibit or limit emissions to a specified level at all times but rather are designed to limit overall emissions from various processes over the course of a year. The commenters said the EPA’s own LDAR programs illustrate this distinction. The commenters contended that no court has suggested that periods of “unlimited emissions” [*e.g.*, 40 CFR 63.119(b)(1) (internal floating roof allowed not to contact with stored material during filling/emptying); 40 CFR 63.119(b)(6) (covers on tank openings may be opened when needed for access to contents); 40 CFR 63.135(c)(2) (allowing openings on containers as necessary to prevent physical damage)] render these requirements insufficient under CAA section 112. Rather, the commenters said that work practice standards associated with these requirements—*e.g.*, maintaining openings in a closed

position except as necessary for access; conducting filling/emptying as rapidly as possible—are considered to be acceptable mechanisms to minimize overall emissions from these types of equipment, even when they do not limit emissions at all during a few brief periods that are necessary for operational or safety reasons.

*Response:* We disagree with the comment that the work practice standards that we are finalizing for PRD releases and for emergency releases from flares are malfunction exemptions and we disagree with the assertion that the standards do not apply at all times. We also disagree that PRDs are simply bypasses for emissions that are subject to emission limits and controls or that they allow for uncontrolled emissions without violation or penalty. We also disagree that the standards being finalized allow facilities to ignore the flare tip velocity and no-visible emissions flare requirements such that a flare can smoke without repercussions and without limits repeatedly.

As discussed in section IV.C of this preamble, the requirements and work practice standards require a number of prevention measures that operators must undertake to prevent PRD release and flare smoking events, including the installation and operation of continuous monitoring device(s) to identify when a PRD release has occurred. The work practice combustion efficiency standards (specifically limits on the NHVcz) and requirements to have a continuously lit pilot flame or flare flame apply at all times, including during periods of emergency flaring. We also note that a flare is not a specific emission source within the MON standards; rather, a flare is an APCD that has always been a type of emission control technology that miscellaneous organic chemical manufacturing facilities could utilize to comply with the underlying MACT standards. Flares are associated with a wide variety of process equipment, and the emissions routed to a flare during a malfunction can vary widely based on the cause of the malfunction and the type of associated equipment. As such, there can be certain instances when flares may be operated above their smokeless capacity to control emissions from certain events such as malfunction events, and we are finalizing work practice standards for visible emissions events when flares are operated above their smokeless capacity based on the best performing flares in the source category.

Further, we are limiting the number of releases that would result in a deviation from the work practice standards.

Regarding the comment that civil penalties may provide remedy for these releases, we note that the work practice standards provide for sufficient specificity to identify when a release is a deviation from the work practice standard, as well as a root cause analysis to help guide a decisionmaker in deciding whether to pursue an enforcement action because they believe a violation has occurred and for a court or other arbiter to rule on any claim.

#### 4. What is the rationale for our final approach and final decisions to address emissions during periods of SSM?

We evaluated all of the comments on the EPA's proposed amendments to the SSM provisions. For the reasons explained in the proposed rule (84 FR 69182, December 17, 2019), we determined that these amendments, which remove and revise provisions related to SSM, are necessary to be consistent with the requirement that the standards apply at all times. More information concerning the amendments we are finalizing for SSM is in the preamble to the proposed rule and in the comments and our specific responses to the comments in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking. Therefore, we are finalizing our approach for the SSM provisions as proposed.

#### E. Other Amendments to the MACT Standards

##### 1. What other amendments did we propose for the Miscellaneous Organic Chemical Manufacturing source category?

We proposed adding monitoring requirements at 40 CFR 63.2450(e)(7) for adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated offsite because the MON does not currently include specific monitoring requirements for this type of APCD. We proposed that owners or operators of this type of APCD use dual adsorbent beds in series and conduct daily monitoring. In order to monitor performance deterioration, we proposed daily measurements of HAP or TOC using a portable analyzer or chromatographic analysis for non-regenerative adsorbers (to be taken daily on the outlet of the first adsorbent bed in series using a sample port). Furthermore, in order to relieve some monitoring burden, we proposed an option to reduce the frequency of

monitoring with the portable analyzer from daily to weekly or monthly.

We also proposed that owners or operators submit electronic copies of required flare management plans (at 40 CFR 63.2450(e)(5)(iv)), compliance reports (at 40 CFR 63.2520(e)), performance test reports (at 40 CFR 63.2520(f)), and performance evaluation reports (at 40 CFR 63.2520(g)) through the EPA's CDX using CEDRI, and we proposed two narrow circumstances in which owners or operators may seek extensions to the deadline if they are prevented from reporting by conditions outside of their control within five business days of the reporting deadline. We proposed at 40 CFR 63.2520(h) that an extension may be warranted due to outages of the EPA's CDX or CEDRI that precludes an owner or operator from accessing the system and submitting required reports. We also proposed at 40 CFR 63.2520(i) that an extension may be warranted due to a *force majeure* event, such as an act of nature, act of war or terrorism, or equipment failure or safety hazards beyond the control of the facility.

Finally, we proposed revisions to clarify text or correct typographical errors, grammatical errors, and cross-reference errors. These editorial corrections and clarifications are summarized in Table 11 of the proposal preamble. See 84 FR 69228, December 17, 2019.

##### 2. How did the other amendments for the Miscellaneous Organic Chemical Manufacturing source category change since proposal?

We are finalizing the other amendments discussed in section IV.E.1 of this preamble as proposed, except that, in the final rule, we are correcting an error to clarify that compliance reports must be submitted electronically (*i.e.*, through the EPA's CDX using the appropriate electronic report template for this subpart) beginning three years after date of publication of final rule in the **Federal Register** or once the reporting template has been available on the CEDRI website for 1 year, whichever date is later. Also, as discussed further in the response to comment document for this rulemaking, we are adding back in provisions originating from 40 CFR 63.104(a)(1), (2), (5), and (6) that were inadvertently removed in the proposed rule. Finally, we are including several additional minor clarifying edits in the final rule based on comments received during the public comment period.

We are revising the proposed monitoring requirements at 40 CFR 63.2450(e)(7) for adsorbers that cannot be regenerated and regenerative

adsorbers that are regenerated offsite to reduce the frequency of monitoring with the portable analyzer based upon the design life of the bed. Instead of daily monitoring, the final rule will allow owners or operators to monitor monthly if the bed has at least two months of the bed design life remaining and weekly if the bed has between two months and two weeks of bed design life remaining. Daily monitoring is required once the bed has less than two weeks of bed design life remaining. Under the final rule, owners or operators will also be required to conduct monitoring no later than 3 days after a bed is put into service as the first bed to confirm that it is functioning properly.

### 3. What key comments did we receive on the other amendments for the Miscellaneous Organic Chemical Manufacturing source category and what are our responses?

This section provides comment and responses for the key comments received regarding our proposed revisions to the monitoring requirements for adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated offsite. With the exception of these comments related to the proposed monitoring requirements for adsorbers, we did not receive many substantive comments on the other amendments in the MON RTR proposal. The comments we received regarding other amendments generally include issues related to electronic reporting, removal of certain exemptions for heat exchange systems, overlap provisions for equipment leaks, and revisions that we proposed for clarifying text or correcting typographical errors, grammatical errors, and cross-reference errors. The comments and our specific responses to these issues can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking.

*Comment:* Several commenters disagreed with the proposed requirement at 40 CFR 63.2450(e)(7) for adsorbers that cannot be regenerated or adsorbers that are regenerated offsite.

Commenters contended that requiring the addition of a second adsorber bed in series is not a monitoring function but is a change in allowed controls and, therefore, is an equipment standard that must be evaluated under CAA section 112(d)(6).

Commenters disagreed with the EPA's justification for requiring a dual bed system as "use of a single bed does not

ensure continuous compliance unless the bed is replaced significantly before breakthrough," (84 FR 69227) arguing that (1) This same argument also applies to dual bed systems, and (2) the EPA makes no claim that use of a single bed is not achieving continuous compliance frequently enough to justify disallowing single bed systems. Commenters stated that facilities typically follow conservative single-bed change procedures (e.g., 20 to 30 percent of bed saturation) and that single beds are typically oversized and used where only a small percentage of their capacity is expected to be needed. Commenters asserted that conservative single bed change decisions reduce the monitoring required in such cases under applicable rules or permits, or a very conservative breakthrough point is set by rule or permit. Commenter noted that if owners or operators replace single beds prematurely and the cost of the replacement bed is small compared to the increased compliance assurance, then early replacement should be the preferred approach for assuring compliance, because it avoids all of the costs and emissions associated with having dual beds and results in a larger margin of compliance assurance than for a dual bed installation.

Commenter claimed that adding piping components required for a dual bed system will have negative consequences: (1) Adding continuous fugitive emissions from the additional valves and connectors, and (2) creating, in some cases, operating concerns or requiring addition of compression due to the added back pressure from the second bed.

Commenters contended that the proposed equipment standard is not cost effective and would not achieve any reduction in emissions. Commenters disagreed with the EPA's position that there would be no cost for a second bed in a dual bed system and argued that the EPA did not consider the cost of design and engineering, additional structural elements and foundations, reconfiguring the piping, adding valves to isolate each bed, and relocating existing single beds where space is not available for a second bed.

Commenters recommended that the EPA not require dual adsorber beds and monitoring for temporary adsorbers (e.g., systems used for less than 6 months) and small adsorbers that infrequently need replacement. Commenters stated that the only requirement for such systems should be a record demonstrating the bed life is appropriate for the maximum expected emissions loading. Commenter recommended that small adsorbers that

are operated solely as back-up control devices should also be exempted on the basis of the requirements not being cost effective, and on the basis that they are operated no more than some percentage of the minimum potential saturation time.

Commenters asserted that 3 years would be needed to comply with this proposed requirement because the retrofit of an existing single bed system will have to be engineered, appropriated, and then designed and constructed.

Commenters requested that, if the EPA promulgates the adsorber monitoring requirements, the EPA should also remove the requirement at 40 CFR 63.2450(e)(7)(iii)(B) to conduct daily monitoring for the first three adsorber bed change outs because this amount of testing is excessive and represents an unnecessary cost. Commenters stated that, to ensure compliance, some facilities routinely replace adsorbent well in advance of breakthrough. For example, on a non-continuous/intermittent backup system, commenters stated that some facilities replace adsorbent on a yearly basis, regardless of whether the bed is approaching saturation, and bed life would never be established as proposed. In other cases, commenters stated that bed life may be several months, and daily monitoring would be unnecessarily expensive. Commenters recommended that the EPA adopt a reduced monitoring frequency similar to the Benzene Waste Operations NESHAP at 40 CFR 61.354(d) where facilities are allowed to monitor either daily or at intervals no greater than 20 percent of the design carbon replacement interval.

Commenters also requested the use of colorimetric tubes to monitor for breakthrough in place of instrument monitoring. These tubes are placed in a fitting in the vent at the outlet of the first adsorber bed and are filled with a reagent that changes color when exposed to specific target compounds or to volatile organic compounds, depending on the vapor, which indicates breakthrough.

Finally, commenters requested that the EPA clarify that systems with more than two adsorber beds in series would be allowed and that dual bed (i.e., two bed) systems are not the only ones allowed.

*Response:* The EPA is revising the proposed monitoring requirements for non-regenerative adsorbers to address some of the commenters concerns, but the final rule still requires the use of a dual bed system in series and monitoring at the outlet of the first bed to detect breakthrough.

The EPA acknowledges that the proposed requirements could have been considered under CAA section 112(d)(6) because of the specification to have two adsorber beds in series, instead of as a proposed change to the monitoring requirements. However, the EPA presented the technical rationale for why a second bed was needed and for why the estimated costs for adding a second bed would be minimal. This rationale would not have been any different if the EPA described the proposed changes under CAA section 112(d)(6) instead of as a monitoring change. These changes were proposed because the current 40 CFR part 63, subpart FFFF, contained no monitoring requirements for non-regenerative adsorbers.

The commenters requested that the EPA establish work practice or operational standards that would allow the continued use of a single bed system (e.g., changing adsorber beds when they had reached some percentage of their designed capacity). While we agree with the comment that a single bed approach can be very effective at controlling HAP from sources subject to the MON, our goal is to ensure that sources are complying with the standards at all times and even a well maintained single bed system is vulnerable to errors that are not possible with the dual bed system we are requiring. The proposed and final monitoring requirements for non-regenerative adsorbers fulfill the EPA's obligation to establish monitoring requirements to ensure continuous compliance with the emission limits (e.g., 98-percent control or a 20 ppm TOC outlet concentration) when owners or operators are using these types of control devices to comply with the standards.

In response to the commenters' concerns about the costs of adding a second adsorber bed, we used the EPA's cost algorithms to estimate the cost of a second carbon adsorber bed for two adsorber scenarios. In the first, scenario, the EPA estimated the cost of a replaceable-canister type adsorber holding 180 lbs of carbon. The total capital investment of the second bed (including installation and auxiliary equipment) is about \$5,100, and the total annual cost is about \$900. In the second scenario, we estimated the cost of an adsorber that holds 3,000 lbs of carbon and in which the carbon is removed and replaced by fresh carbon when needed. The total capital investment of the second bed (including installation and auxiliary equipment) is about \$22,300, and the total annual cost is about \$3,000. We assumed no additional labor would be required for

operation and maintenance of the second adsorber bed compared to operating and maintaining a single bed adsorber. We documented this analysis for the final rulemaking in the memorandum, *Analysis of Monitoring Costs and Dual Bed Costs for Non-Regenerative Carbon Adsorbers Used in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which is available in the docket for this rulemaking.

In both scenarios, we assumed that the first bed would be replaced when it reached breakthrough (i.e., its equilibrium capacity, which is when the adsorption zone of the bed reaches the bed outlet and the volatile concentration in the exhaust begins to rise) based on monitoring at the outlet of the first bed. At that time, the owner or operator would divert the flow from the first to the second bed, the canisters or carbon would be replaced in the first bed, and it would then be returned to service as the second bed in the series. We did not include the cost of replacing the canisters or the carbon in the annual costs because the amount of carbon used would not increase as a result of using a second bed in series. The EPA still concludes that having two beds in series and performing monitoring at the outlet of the first bed will reduce the amount of adsorber media (e.g., activated carbon) used by facilities because they will not have to replace the adsorber media until it reaches equilibrium capacity. With only a single bed and no monitoring, facilities need to replace the adsorber media more frequently based on the estimated working capacity of the bed (which is a fraction of the equilibrium capacity) so as to maintain compliance and to avoid exceeding outlet concentration limits. The EPA determined at proposal that the use of two beds in series and the use of monitoring will maximize the life of each bed and reduce adsorber media replacement costs. The EPA has not changed that determination based on the public comments submitted or on the analyses completed since proposal.

The EPA is revising the proposed monitoring requirements to reduce the frequency of monitoring. In the final rule, owners or operators will be able to conduct monitoring based on the design life of the adsorber bed. The final monitoring requirements are similar to what the EPA proposed for owners or operators who establish the life of the adsorber bed based on at least three bed replacement cycles. However, in the final rule, the EPA will allow owners or operators to use the design life of the bed and to monitor monthly if the bed has at least two months of the bed

design life remaining and weekly if the bed has between two months and two weeks of bed design life remaining. Once the remaining bed design life reaches two weeks, daily monitoring is required. This change from proposal will not lead to an increase in emissions because the final rule will still require the use of beds in series, and any emissions detected when the first bed reaches breakthrough will still be captured by the second bed in the series. After breakthrough on the first bed is detected, the first bed will be removed from service and replaced. The second bed will be moved to the first bed position and the newly replaced bed will become the second bed in series. Therefore, the newest bed will always be operated as a backup to the older bed. Under the final rule, owners or operators will also be required to conduct monitoring no later than 3 days after a bed is put into service as the first bed to confirm that it is functioning properly. This change will substantially reduce the cost of monitoring. For example, the capital cost of portable FID was estimated to be \$9,000, and the total annual cost for daily monitoring was estimated to be \$13,000, but the total annual cost for monthly and weekly monitoring were estimated to be \$2,600 and \$3,700, respectively.

We did not estimate the cost effectiveness (i.e., the cost per ton of HAP reduced) of requiring the second adsorber bed and the final monitoring requirements because the second bed is acting as a backup to the first bed to capture any potential breakthrough, and it is difficult to estimate the mass of HAP that will be captured and the excess emissions that will be avoided by the monitoring.

The EPA is not including an exemption from the final rule requirements for adsorbers used for temporary applications or as backup for other control devices. Control devices used to comply with an emission limitation, even on a temporary basis, must still meet the same performance and monitoring requirements as one used on a permanent basis.

In the final rule, the EPA is not allowing the use of colorimetric tubes in place of instrument monitoring at the outlet of the first adsorber bed. The EPA investigated the use of these tubes but could not find any specification or quality assurance standard that could be incorporated by reference to ensure the accuracy of these tubes in detecting breakthrough. Additionally, we could not find information on the material contained within the tubes and whether the material would react with all HAP being controlled by adsorbers in the

Miscellaneous Organic Chemical Manufacturing source category.

Finally, the EPA is clarifying in the final rule, in response to comments, that systems with at least two beds are required, but systems with more than two beds in series are allowed.

4. What is the rationale for our final approach and final decisions for the other amendments for the Miscellaneous Organic Chemical Manufacturing source category?

Based on the comments received for these other amendments, we are generally finalizing all proposed requirements, with the exception of the monitoring requirements for adsorbers that cannot be regenerated or adsorbers that are regenerated offsite. For the reasons described in section IV.E.3 of this preamble, we are revising the proposed monitoring requirements for these adsorbers in the final rule to reduce the monitoring frequency from what we proposed.

In a few instances (e.g., overlap provisions for equipment leaks), we received comments that led to additional minor editorial corrections and technical clarifications being made in the final rule, and our rationale for these corrections and technical clarifications can be found in the document, *Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing*, available in the docket for this rulemaking.

## V. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted

### A. What are the affected facilities?

We estimate that, as of November 6, 2018, there were 201 MON facilities. A complete list of known MON facilities is available in Appendix 1 of the document, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2019 Risk and Technology Review Proposed Rule*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0011).

### B. What are the air quality impacts?

At the current level of control prior to the amendments being finalized in this action, the EPA estimates that ethylene oxide emissions were approximately 1.1 tpy (actuals) and 3.1 tpy (allowables) from the eight MON facilities with emission process groups (i.e., process vents, storage tanks, equipment leaks) in ethylene oxide service. At the level of

control required by the amendments being finalized in this action, which includes amendments to process vents, storage tanks, and equipment in ethylene oxide service (equipment leak Control Option 1), we estimated ethylene oxide emissions reductions of 0.76 tpy (actuals) and 2.7 tpy (allowables) for the source category.

At the level of control prior to the amendments being finalized in this action, we estimated HAP emissions for all MON facilities of approximately 7,420 tpy and VOC emissions of approximately 19,720 tpy, based on emissions from the MON modeling file available for 194 of the 201 MON facilities identified in this rulemaking. Note that seven of the 201 MON facilities did not report HAP emissions to the 2014 NEI for MON processes. Of this total, approximately 2,558 tpy of HAP and 6,730 tpy of VOC are attributed to emission process groups with amendments being finalized in this action. At the level of control required by the amendments being finalized in this action, we estimate HAP emissions reductions between 107 tpy and 130 tpy and VOC emissions reductions between 283 tpy and 532 tpy. As discussed in the proposal preamble (84 FR 69182, December 17, 2019), we estimated HAP emissions using two different methods (i.e., based on the MON emission inventory and based on model plants, respectively), so estimated emission reductions are presented as a range. We also estimate excess emissions reductions from flares that could result from the final monitoring requirements, which we estimate to be 263 tpy HAP and 1,254 tpy VOC. When considering the flare excess emissions, the total emissions reductions as a result of the final amendments are estimated to be between 370 and 393 tpy of HAP and between 1,537 and 1,786 tpy of VOC. These emissions reductions are documented in the following memoranda, which are available in the docket for this rulemaking: *Clean Air Act Section 112(d)(6) Technology Review for Equipment Leaks Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule, Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule, Analysis of Control Options for Storage Tanks and Process Vents Emitting Ethylene Oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule, Analysis of Control Options for Equipment Leaks at Processes that*

*use Ethylene Oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule, Control Option Impacts for Flares Located in the Miscellaneous Organic Chemical Manufacturing Source Category, and Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule.*

### C. What are the cost impacts?

The total capital investment cost of the final amendments and standards is estimated at approximately \$43 million, including approximately \$40 million for MON facilities without ethylene oxide controls and \$3 million from MON facilities with ethylene oxide controls. We estimate total annual costs of the final amendments, without recovery credits, to be approximately \$13 million.

The nationwide costs of the amendments being finalized in this action are presented in Table 5 of this preamble for (1) All MON sources, (2) only MON sources not expected to be affected by the ethylene oxide-specific controls being finalized in this action (i.e., equipment leaks, heat exchange systems, flares, PRDs, maintenance vents, storage tank degassing activities, recordkeeping and reporting), and (3) only MON sources expected to be affected by the ethylene oxide controls being finalized in this action (i.e., storage tanks, process vents, equipment leaks). As described in this preamble, for ethylene oxide sources, we are finalizing amendments for storage tanks and process vents in ethylene oxide service. For equipment in ethylene oxide service, of the two co-proposed options we are finalizing equipment leak co-proposed Control Option 1, which requires that the same equipment leak standards (i.e., lower the leak definition for batch pumps to 1,000 ppm and require connector monitoring at a leak definition of 500 ppm) will apply to all facilities in ethylene oxide service. These costs are presented in Table 5 of this preamble. There are 201 facilities affected by the amendments, and the number of facilities affected by each of the specific amendments is indicated in Table 5 below. The facility list was developed using methods described in section II.C of the proposal preamble (84 FR 69182, December 17, 2019). A complete list of known MON facilities is available in Appendix 1 of the document, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, which is

available in the docket for this rulemaking.

TABLE 5—TOTAL CAPITAL INVESTMENT AND TOTAL ANNUAL COSTS [2016\$]

	Number of facilities w/costs associated with new requirements	Total capital investment	Total annual costs w/o recovery credits	Total annual costs w/recovery credits
All MON Sources—Total .....		42,700,000	12,700,000	12,300,000
MON Sources w/o Ethylene Oxide Controls—Total .....		39,700,000	11,400,000	11,100,000
Flares <sup>1</sup> .....	21	17,200,000	4,090,000	4,090,000
Equipment Leaks <sup>2</sup> .....	193	829,000	150,000	81,800
PRDs <sup>3</sup> .....	201	18,700,000	4,770,000	4,770,000
Maintenance Vents <sup>3</sup> .....	201		2,340	2,340
Heat Exchange Systems <sup>4</sup> .....	201	1,480,000	261,000	(14,300)
Degassing Tanks <sup>5</sup> .....	162		489,000	489,000
Recordkeeping and Reporting .....	201	1,490,000	1,650,000	1,650,000
MON Sources w/Ethylene Oxide Controls—Total .....		2,990,000	1,250,000	1,250,000
Equipment Leaks <sup>6</sup> .....	7	71,100	47,500	44,600
Process Vents <sup>7</sup> .....	3	2,740,000	943,000	943,000
Storage Tanks <sup>7</sup> .....	3	178,000	258,000	258,000

Costs are rounded to three significant figures.

<sup>1</sup> The flare costs include purchasing analyzers, monitors, natural gas and steam, developing a flare management plan, and performing root cause analysis and corrective action, and are discussed in the memorandum, *Control Option Impacts for Flares Located in the Miscellaneous Organic Chemical Manufacturing Source Category*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0006).

<sup>2</sup> Equipment leak costs include LDAR at a leak definition of 1,000 ppmv for light liquid pumps at batch processes, and are discussed in the memoranda, *Clean Air Act Section 112(d)(6) Technology Review for Equipment Leaks Located in the Miscellaneous Organic Chemical Manufacturing Source Category* (see Docket Item No. EPA-HQ-OAR-2018-0746-0003) and *Clean Air Act Section 112(d)(6) Technology Review for Equipment Leaks Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule* which are available in the docket for this rulemaking.

<sup>3</sup> PRD costs were developed to comply with the work practice standard being finalized in this action and include implementation of three prevention measures, performing root cause analysis and corrective action, and purchasing PRD monitors. Maintenance costs were estimated to document equipment opening procedures and circumstances under which the alternative maintenance vent limit is used. Costs are discussed in the memorandum, *Review of Regulatory Alternatives for Certain Vent Streams in the Miscellaneous Organic Chemical Manufacturing Source Category*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0010).

<sup>4</sup> Heat exchange systems costs include the use of the Modified El Paso Method to monitor for leaks, and are discussed in the memoranda, *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the Miscellaneous Organic Chemical Manufacturing Source Category* (see Docket Item No. EPA-HQ-OAR-2018-0746-0007) and *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which are available in the docket for this rulemaking.

<sup>5</sup> Costs for degassing storage tanks are discussed in the memorandum, *Storage Tank Degassing Cost and Emissions Impacts for the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which is available in the docket for this rulemaking.

<sup>6</sup> Equipment leak costs for equipment in ethylene oxide service include costs for equipment leak co-proposed Control Option 1. Control Option 1 includes LDAR at a leak definition of 1,000 ppmv for light liquid pumps at batch processes with monthly monitoring and connector monitoring at a leak definition of 500 ppmv with annual monitoring. Costs are discussed in the memoranda, *Analysis of Control Options for Equipment Leaks at Processes that use Ethylene Oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category* (see Docket Item No. EPA-HQ-OAR-2018-0746-0004) and *Analysis of Control Options for Equipment Leaks at Processes that use Ethylene Oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which are available in the docket for this rulemaking.

<sup>7</sup> Costs for process vents and storage tanks in ethylene oxide service include the requirement to control all storage tanks in ethylene oxide service, the installation of a control device that achieves 99.9-percent ethylene oxide emissions reductions, and initial and periodic performance testing of the control device, and are discussed in the memoranda, *Analysis of Control Options for Storage Tanks and Process Vents Emitting Ethylene Oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category* (see Docket Item No. EPA-HQ-OAR-2018-0746-0005) and *Analysis of Control Options for Storage Tanks and Process Vents Emitting Ethylene Oxide Located in the Miscellaneous Organic Chemical Manufacturing Source Category For the Final Rule*, which are available in the docket for this rulemaking.

D. What are the economic impacts?

The economic impact analysis is designed to inform decision makers about the potential economic consequences of the compliance costs outlined in section V.C of this preamble. The EPA performed a screening analysis for impacts on all affected facilities by comparing compliance costs to revenues at the ultimate parent company level. This is known as the cost-to-revenue or

cost-to-sales test, or the “sales test.” The “sales test” is an impact methodology the EPA employs in analyzing entity impacts as opposed to a “profits test,” in which annualized compliance costs are calculated as a share of profits. The use of a sales test for estimating small business impacts for a rulemaking is consistent with guidance offered by the EPA on compliance with the Regulatory Flexibility Act (RFA) and is consistent

with guidance published by the U.S. Small Business Administration’s Office of Advocacy that suggests that cost as a percentage of total revenues is a metric for evaluating cost increases on small entities in relation to increases on large entities.

There are 201 MON facilities, owned by 99 parent companies, affected by the final amendments. Of the parent companies, 17 companies, or 17

percent, are small entities. We identified the North American Industry Classification System (NAICS) code for all parent companies and applied the U.S. Small Business Administration's table of size standards to determine which of the companies were small entities. Also, we calculated the cost-to-sales ratios for all the affected entities to determine (1) The magnitude of the costs of the amendments being finalized in this action and (2) whether there would be a significant impact on small entities. To be conservative, we used facility-specific costs without recovery credits. For all firms, the average cost-to-sales ratio is approximately 0.06 percent; the median cost-to-sales ratio is less than 0.01 percent; and the maximum cost-to-sales ratio is approximately 0.97 percent. For large firms, the average cost-to-sales ratio is approximately 0.01 percent; the median cost-to-sales ratio is less than 0.01 percent; and the maximum cost-to-sales ratio is approximately 0.52 percent. For small firms, the average cost-to-sales ratio is approximately 0.30 percent, the median cost-to-sales ratio is 0.11 percent, and the maximum cost-to-sales ratio is 0.97 percent. The facility-specific costs for the 17 small firms ranged from \$35,083 to \$42,746 annually (2016\$). The costs of the final action are not expected to result in a significant market impact, regardless of whether they are passed on to the purchaser or absorbed by the firms.

More information and details of this analysis is provided in the memorandum, *Economic Impact and Small Business Screening Assessments for Final Amendments to the National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing*, which is available in the docket for this rulemaking.

#### E. What are the benefits?

The EPA did not monetize the benefits from the estimated emission reductions of HAP associated with this final action. The EPA currently does not have sufficient methods to monetize benefits associated with HAP, HAP reductions, and risk reductions for this rulemaking. However, we estimate that the final rule amendments would reduce HAP emissions by 107 tons per year and thus lower risk of adverse health effects in communities near facilities subject to the MON.

#### F. What analysis of environmental justice did we conduct?

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes Federal executive policy on environmental

justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

To examine the potential for any environmental justice issues that might be associated with the source category, we performed a demographic analysis, which is an assessment of risks to individual demographic groups of the populations living within 5 km and within 50 km of the facilities. In the analysis, we evaluated the distribution of HAP-related cancer and noncancer risks from the Miscellaneous Organic Chemical Manufacturing source category across different demographic groups within the populations living near facilities.

Our analysis of the demographics of the population with estimated risks greater than 1-in-1 million indicates potential disparities in risks between demographic groups, including the African American, Hispanic or Latino, Over 25 Without a High School Diploma, and Below the Poverty Level groups. In addition, the population living within 50 km of the MON facilities has a higher percentage of minority, lower income, and lower education people when compared to the nationwide percentages of those groups. However, acknowledging these potential disparities, the risks for the source category were determined to be acceptable after implementation of the controls required by the final amendments, and emissions reductions from the final amendments will benefit these groups the most.

The documentation for this decision is contained in section IV.A of this preamble, and the technical report, *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Miscellaneous Organic Chemical Manufacturing Source Category Operations* dated November 27, 2018, which is available in the docket for this rulemaking.

As noted in section IV, the EPA reanalyzed risks using emission inventory updates from a CAA section 114 request and additional information received during the public comment period. Based on the revised risk results, the EPA also updated the demographic analysis. The revised demographic analysis indicated slight changes (ranging from 1–3%) in the population with estimated risks greater than 1-in-1

million for four demographic groups (African American, Hispanic or Latino, Below the Poverty Level, and Linguistic Isolation). However, the overall conclusions remain the same. The updated demographic analysis, *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Miscellaneous Organic Chemical Manufacturing Source Category Operations* dated May 21, 2020, is available in the docket for this rulemaking.

#### G. What analysis of children's environmental health did we conduct?

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are summarized in section IV.A of this preamble and are further documented in the risk report, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, available in the docket for this rulemaking (see Docket Item No. EPA–HQ–OAR–2018–0746–0013).

## VI. Statutory and Executive Order Reviews

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

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

This action is a significant regulatory action that was submitted to Office of Management and Budget (OMB) for review because it raises novel legal or policy issues. Any changes made in response to OMB recommendations have been documented in the docket. The EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is found in the memorandum *Economic Impact and Small Business Screening Assessments for Final Amendments to the National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing*, in the docket for this rulemaking.

*B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs*

This action is considered an Executive Order 13771 regulatory action. Details on the estimated costs of this final rule can be found in the EPA's analysis of the potential costs and benefits associated with this action discussed in section V of this preamble.

*C. Paperwork Reduction Act (PRA)*

The information collection activities in this rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 1969.09. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

We are finalizing amendments that change the reporting and recordkeeping requirements for several emission sources at MON facilities (e.g., flares, heat exchangers, PRDs, storage tanks, and process vents). Specifically, we are finalizing, as proposed, a requirement that owners or operators of MON facilities submit electronic copies of notification of compliance status reports (being finalized at 40 CFR 63.2520(d)), compliance reports (being finalized at 40 CFR 63.2520(e)), performance test reports (being finalized at 40 CFR 63.2520(f)), and performance evaluation reports (being finalized at 40 CFR 63.2520(g)) through the EPA's CDX using the CEDRI. We are also requiring recordkeeping of each report and other records for storage tank degassing, flares, PRDs, process vents, storage tanks, heat exchangers, bypass lines, and maintenance vents (being finalized at 40 CFR 63.2470(f), and 40 CFR 63.2525(m) through (r)). The final amendments also remove the malfunction exemption and impose other revisions that affect reporting and recordkeeping.

This information will be collected to assure compliance with 40 CFR part 63, subpart FFFF. The total estimated burden and cost for reporting and recordkeeping due to these amendments are presented below and are not intended to be cumulative estimates that include the burden associated with the requirements of the existing 40 CFR part 63, subpart FFFF.

*Respondents/affected entities:*

Owners or operators of MON facilities.

*Respondent's obligation to respond:*

Mandatory (40 CFR part 63, subpart FFFF).

*Estimated number of respondents:*

201 (total).

*Frequency of response:* Semiannual or annual. Responses include notification of compliance status reports and semiannual compliance reports.

*Total estimated burden:* 12,219 hours (per year). Burden is defined at 5 CFR 1320.3(b).

*Total estimated cost:* \$3,642,730 (per year), includes \$2,405,799 annualized capital and operation and maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the **Federal Register** and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities in this final rule.

*D. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are small businesses according to the Small Business Administration's small business size standards. The Agency has determined that 17 of the 99 affected entities are small entities that may experience an impact of an average cost-to-sales ratio of approximately 0.30 percent. Details of this analysis are presented in the memorandum, *Economic Impact and Small Business Screening Assessments for Final Amendments to the National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing*, which is available in the docket for this rulemaking.

*E. Unfunded Mandates Reform Act (UMRA)*

This action does not contain an unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector, the cost does not exceed \$100 million or more.

*F. Executive Order 13132: Federalism*

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

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

This action does not have tribal implications as specified in Executive Order 13175. None of the MON facilities that have been identified as being affected by this final action are owned or operated by tribal governments or located within tribal lands within a 10 mile radius. Thus, Executive Order 13175 does not apply to this action. We conducted an impact analysis using the latitude and longitude coordinates from the risk modeling input file to identify tribal lands within a 10 and 50 mile radius of MON facilities to determine potential air quality impacts on tribes. Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, although there were no tribal lands located within a 10 mile radius of MON facilities, the EPA offered consultation with 14 tribes that were identified within a 50 mile radius of an affected facility, however, no tribal officials requested consultation. Additional details regarding the consultation letter and distribution list can be found in the memorandum, *MON RTR Consultation Letter*, which is available in the docket for this rulemaking. The EPA also participated on a phone call with the National Tribal Air Association on December 12, 2019, and presented an overview of the rulemaking.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in section IV.A of this preamble and further documented in the risk report, *Residual Risk Assessment for the Miscellaneous Organic Chemical Manufacturing Source Category in Support of the 2020 Risk and Technology Review Final Rule*, which is available in the docket for this rulemaking.

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

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The overall energy consumption and

economic impact of these final amendments is expected to be minimal for MON facilities and their parent companies (some of which are engaged in the energy sector) and, therefore, we do not expect any adverse effects on the supply, distribution, or use of energy as a result.

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

This rulemaking involves technical standards. As discussed in the proposal preamble (84 FR 69182, December 17, 2019), the EPA conducted searches for the MACT standards through the Enhanced National Standards Systems Network Database managed by the American National Standards Institute (ANSI). We also contacted voluntary consensus standards (VCS) organizations and accessed and searched their databases. We conducted searches for EPA Methods 1, 1A, 2, 2A, 2C, 2D, 2F, 2G, 3, 3A, 3B, 4, 5, 15, 18, 21, 22, 25, 25A, 25D, 26, 26A, and 29 of 40 CFR part 60, appendix A, 301, 305, 316, and 320 of 40 CFR part 63, 624 and 625 of 40 CFR part 136, appendix A, 1624, 1625, 1666 and 1671 of 40 CFR part 136, appendix A, 5030B (SW-846), 5031, 8260, 8260B (SW-846), 8260D (SW-846), 8270 and 8430 (SW-846) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846 third edition. During the EPA's VCS search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures that are similar to the EPA's reference method, the EPA reviewed it as a potential equivalent method.

The EPA incorporates by reference VCS ASTM D5790-95 (Reapproved 2012), "Standard Test Method for Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry," as an acceptable alternative to EPA Method 624 (and for the analysis of total organic HAP in wastewater samples). For wastewater analyses, this ASTM method should be used with the sampling procedures of EPA Method 25D or an equivalent method to be a complete alternative. The ASTM standard is validated for all of the 21 volatile organic HAP (including toluene) targeted by EPA Method 624 but is also validated for an additional 14 HAP not targeted by the EPA method. This test method covers the identification and simultaneous measurement of purgeable volatile organic compounds. This method is applicable to a wide range of organic compounds that have sufficiently high

volatility and low water solubility to be efficiently removed from water samples using purge and trap procedures. We note that because the Cellulose Products Manufacturing RTR proposed rule has already proposed to revise the performance test requirements table (Table 4 to subpart UUUU of part 63) to add IBR for ASTM D5790-95 (Reapproved 2012) (see 84 FR 47375, September 9, 2019), the EPA is not incorporating this specific aspect of this VCS by reference.

The EPA incorporates by reference VCS ASTM D6420-18, "Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry" as an acceptable alternative to EPA Method 18 with the following caveats. This ASTM procedure has been approved by the EPA as an alternative to EPA Method 18 only when the target compounds are all known and the target compounds are all listed in ASTM D6420-18 as measurable. ASTM D6420-18 should not be used for methane and ethane because the atomic mass is less than 35; and ASTM D6420-18 should never be specified as a total VOC method. The ASTM D6420-18 test method employs a direct interface gas chromatograph-mass spectrometer to measure 36 VOC. The test method provides on-site analysis of extracted, unconditioned, and unsaturated (at the instrument) gas samples from stationary sources.

The EPA incorporates by reference VCS ASTM D6784-02 (Reapproved 2008), "Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)," as an acceptable alternative to EPA Method 101A of appendix B to 40 CFR part 61 and EPA Method 29 of appendix A-8 to 40 CFR part 60 (portion for mercury only) as a method for measuring mercury. Note that this applies to concentrations of approximately 0.5 to 100 micrograms per normal cubic meter of air. This method describes equipment and procedures for obtaining samples from effluent ducts and stacks, equipment and procedures for laboratory analysis, and procedures for calculating results. This method is applicable for sampling elemental, oxidized, and particle-bound mercury in flue gases of coal-fired stationary sources.

The three ASTM methods (ASTM D5790-95 (Reapproved 2012), ASTM D6420-18, and ASTM D6784-02 (Reapproved 2008)) are available at ASTM International, 1850 M Street NW, Suite 1030, Washington, DC 20036. See <https://www.astm.org/>.

While the EPA identified 23 other VCS as being potentially applicable, the Agency decided not to use them because these methods are impractical as alternatives because of the lack of equivalency, documentation, validation date, and other important technical and policy considerations. The search and review results have been documented and are in the memorandum, *Voluntary Consensus Standard Results for National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing NESHAP RTR*, which is available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0018).<sup>26</sup>

Under 40 CFR 63.7(f) and 40 CFR 63.8(f), subpart A—General Provisions, a source may apply to the EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures in the final rule or any amendments.

Finally, although not considered a VCS, the EPA incorporates by reference, "Purge-And-Trap For Aqueous Samples" (SW-846-5030B), "Volatile, Nonpurgeable, Water-Soluble Compounds by Azeotropic Distillation" (SW-846-5031), and "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)" (SW-846-8260D) into 40 CFR 63.2492(b) and (c)(1); and "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," into 40 CFR 63.2490(d)(1)(iii)(A) and (B), and 40 CFR 63.2525(r)(4)(iv)(A). Each of these methods is used to identify organic HAP in water; however, SW-846-5031, SW-846-8260D, and SW-846-5030B use water sampling techniques and the Modified El Paso Method uses an air stripping sampling technique. The SW-846 methods are reasonably available from the EPA at <https://www.epa.gov/hw-sw846> while the Modified El Paso Method is reasonably available from TCEQ at [https://www.tceq.texas.gov/assets/public/compliance/field\\_ops/guidance/samplingapp.pdf](https://www.tceq.texas.gov/assets/public/compliance/field_ops/guidance/samplingapp.pdf).

<sup>26</sup> At proposal, we identified two 40 CFR part 63, subpart SS, VCS (*i.e.*, ANSI/ASME PTC 19-10-1981-Part 10 and ASTM D6348-12e1) that were also identified in the NTTAA review for the Ethylene Production RTR, and these VCS have already been finalized as amendments in that action (for further information, see Docket ID No. EPA-HQ-OAR-2017-0357 and 84 FR 54329, October 9, 2019).

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

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

The documentation for this decision is contained in section IV.A of this preamble and in the technical report, *Risk and Technology Review—Analysis of Demographic Factors for Populations Living Near Miscellaneous Organic Chemical Manufacturing Source Category Operations*, available in the docket for this rulemaking (see Docket Item No. EPA-HQ-OAR-2018-0746-0013).

*L. Congressional Review Act (CRA)*

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

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

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

**Andrew Wheeler,**  
*Administrator.*

For the reasons set forth in the preamble, the EPA is amending 40 CFR part 63 as follows:

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

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

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

**Subpart A—General Provisions**

- 2. Section 63.14 is amended by:
  - a. Revising paragraphs (h)(73), (94), and (102);
  - b. Redesignating paragraphs (n)(14) through (25) as paragraphs (n)(17) through (28) and paragraphs (n)(10) through (13) as paragraphs (n)(12) through (15);
  - c. Adding new paragraphs (n)(10), (11), and (16); and
  - d. Revising paragraph (t)(1).

The revisions and additions read as follows:

**§ 63.14 Incorporations by reference.**

\* \* \* \* \*

(h) \* \* \*  
(73) ASTM D5790–95 (Reapproved 2012), Standard Test Method for Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry, Approved June 15, 2012, IBR approved for § 63.2485(h) and Table 4 to subpart UUUU.

\* \* \* \* \*

(94) ASTM D6420–18, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, Approved November 1, 2018 IBR approved for §§ 63.987(b), 63.997(e), and 63.2354(b), table 5 to subpart EEEE, and § 63.2450(j).

\* \* \* \* \*

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

\* \* \* \* \*

(n) \* \* \*  
(10) SW–846–5030B, Purge-And-Trap For Aqueous Samples, Revision 2, December 1996, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.2492(b) and (c).

(11) SW–846–5031, Volatile, Nonpurgeable, Water-Soluble Compounds by Azeotropic Distillation, Revision 0, December 1996, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.2492(b) and (c).

\* \* \* \* \*

(16) SW–846–8260D, Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry, Revision 4, June 2018, in EPA Publication No. SW–846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, IBR approved for § 63.2492(b) and (c).

\* \* \* \* \*

(t) \* \* \*  
(1) “Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources,” Revision Number One, dated January 2003, Sampling

Procedures Manual, Appendix P: Cooling Tower Monitoring, January 31, 2003, IBR approved for §§ 63.654(c) and (g), 63.655(i), 63.1086(e), 63.1089, 63.2490(d), 63.2525(r), and 63.11920.

\* \* \* \* \*

**Subpart FFFF—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing**

■ 3. Section 63.2435 is amended by revising paragraph (c)(3) to read as follows:

**§ 63.2435 Am I subject to the requirements in this subpart?**

\* \* \* \* \*

(c) \* \* \*  
(3) The affiliated operations located at an affected source under subparts GG (National Emission Standards for Aerospace Manufacturing and Rework Facilities), KK (National Emission Standards for the Printing and Publishing Industry), JJJJ (NESHAP: Paper and Other Web Coating), MMMM (NESHAP: Surface Coating of Miscellaneous Metal Parts and Products), and SSSS (NESHAP: Surface Coating of Metal Coil) of this part. Affiliated operations include, but are not limited to, mixing or dissolving of coating ingredients; coating mixing for viscosity adjustment, color tint or additive blending, or pH adjustment; cleaning of coating lines and coating line parts; handling and storage of coatings and solvent; and conveyance and treatment of wastewater.

\* \* \* \* \*

■ 4. Section 63.2445 is amended by revising paragraphs (a) introductory text and (b) and adding paragraphs (g) through (i) to read as follows:

**§ 63.2445 When do I have to comply with this subpart?**

(a) Except as specified in paragraphs (g) through (i) of this section, if you have a new affected source, you must comply with this subpart according to the requirements in paragraphs (a)(1) and (2) of this section.

\* \* \* \* \*

(b) Except as specified in paragraphs (g) through (i) of this section, if you have an existing source on November 10, 2003, you must comply with the requirements for existing sources in this subpart no later than May 10, 2008.

\* \* \* \* \*

(g) All affected sources that commenced construction or reconstruction on or before December 17, 2019, must be in compliance with the requirements listed in paragraphs (g)(1) through (7) of this section upon

initial startup or on August 12, 2023, whichever is later. All affected sources that commenced construction or reconstruction after December 17, 2019, must be in compliance with the requirements listed in paragraphs (g)(1) through (7) of this section upon initial startup, or on August 12, 2020 whichever is later.

(1) The general requirements specified in §§ 63.2450(a)(2), (e)(4) through (7), (g)(6) and (7), (i)(3), (j)(5)(ii), (j)(6), (k)(1)(ii), (k)(7) and (8), (t), and (u), 63.2520(d)(3) and (e)(11) through (13), 63.2525(m) through (o), and 63.2535(m).

(2) For process vents, the requirements specified in §§ 63.2450(v), 63.2520(e)(14), and 63.2525(p).

(3) For storage tank degassing, the requirements specified in § 63.2470(f).

(4) For equipment leaks and pressure relief devices, the requirements specified in §§ 63.2480(e) and (f), 63.2520(d)(4) and (e)(14), and 63.2525(q).

(5) For wastewater streams and liquid streams in open systems within an MCPU, the requirements specified in § 63.2485(i)(2)(iii), (n)(2)(vii), (p), and (q).

(6) For heat exchange systems, the requirements specified in §§ 63.2490(d), 63.2520(e)(16), and 63.2525(r).

(7) The other notification, reports, and records requirements specified in §§ 63.2500(g), 63.2520(e)(5)(ii)(D) and (e)(5)(iii)(M) and (N), and 63.2525(l) and (u).

(h) All affected sources that commenced construction or reconstruction on or before December 17, 2019, must be in compliance with the requirements for pumps in light liquid service in § 63.2480(b)(6) and (c)(10) upon initial startup or on August 12, 2021, whichever is later. All affected sources that commenced construction or reconstruction after December 17, 2019, must be in compliance with the requirements for pumps in light liquid service in § 63.2480(b)(6) and (c)(10) upon initial startup, or on August 12, 2020, whichever is later.

(i) All affected sources that commenced construction or reconstruction on or before December 17, 2019, must be in compliance with the ethylene oxide requirements in §§ 63.2450(h) and (r), 63.2470(b) and (c)(4), 63.2492, 63.2493, 63.2520(d)(5) and (e)(17), and 63.2525(s) and Table 1 to this subpart, item 5, Table 2 to this subpart, item 3, Table 4 to this subpart, item 3, and Table 6 to this subpart, item 3, upon initial startup or on August 12, 2022, whichever is later. All affected sources that commenced construction or reconstruction after December 17, 2019, must be in compliance with the

ethylene oxide requirements listed in §§ 63.2450(h) and (r), 63.2470(b) and (c)(4), 63.2492, 63.2493, 63.2520(d)(5) and (e)(17), and 63.2525(s) and Table 1 to this subpart, item 5, Table 2 to this subpart, item 3, Table 4 to this subpart, item 3, and Table 6 to this subpart, item 3, upon initial startup, or on August 12, 2020, whichever is later.

■ 5. Section 63.2450 is amended by:

■ a. Revising paragraphs (a), (c)(2) introductory text, and (e)(1) through (3);

■ b. Adding paragraphs (e)(4) through (7);

■ c. Revising paragraphs (f) introductory text, (g) introductory text, (g)(3)(ii), and (g)(5);

■ d. Adding paragraphs (g)(6) and (7);

■ e. Revising paragraphs (h), (i) introductory text, and (i)(2);

■ f. Adding paragraph (i)(3);

■ g. Revising paragraphs (j) introductory text, (j)(1) introductory text, (j)(1)(i), (j)(2)(iii), and (j)(3) through (5);

■ h. Adding paragraph (j)(6);

■ i. Revising paragraphs (k) introductory text, (k)(1), and (k)(4)(iv);

■ j. Adding paragraphs (k)(7) and (8);

■ k. Revising paragraphs (p) and (r); and

■ l. Adding paragraphs (t), (u), and (v).

The revisions and additions read as follows:

**§ 63.2450 What are my general requirements for complying with this subpart?**

(a) *General.* You must comply with paragraphs (a)(1) and (2) of this section.

(1) Except as specified in paragraph (a)(2) of this section, you must be in compliance with the emission limits and work practice standards in Tables 1 through 7 to this subpart at all times, except during periods of startup, shutdown, and malfunction (SSM), and you must meet the requirements specified in §§ 63.2455 through 63.2490 (or the alternative means of compliance in § 63.2495, § 63.2500, or § 63.2505), except as specified in paragraphs (b) through (s) of this section. You must meet the notification, reporting, and recordkeeping requirements specified in §§ 63.2515, 63.2520, and 63.2525.

(2) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (a)(1) of this section no longer applies. Instead, you must be in compliance with the emission limits and work practice standards in Tables 1 through 7 to this subpart at all times, and you must meet the requirements specified in §§ 63.2455 through 63.2490 (or the alternative means of compliance in § 63.2495, § 63.2500, or § 63.2505), except as specified in paragraphs (b) through (v) of this section. You must meet the notification, reporting, and

recordkeeping requirements specified in §§ 63.2515, 63.2520, and 63.2525.

\* \* \* \* \*

(c) \* \* \* \* \*

(2) Determine the applicable requirements based on the hierarchy presented in paragraphs (c)(2)(i) through (vi) of this section. For a combined stream, the applicable requirements are specified in the highest-listed paragraph in the hierarchy that applies to any of the individual streams that make up the combined stream. For example, if a combined stream consists of emissions from Group 1 batch process vents and any other type of emission stream, then you must comply with the requirements in paragraph (c)(2)(i) of this section for the combined stream; compliance with the requirements in paragraph (c)(2)(i) of this section constitutes compliance for the other emission streams in the combined stream. Two exceptions are that you must comply with the requirements in Table 3 to this subpart and § 63.2465 for all process vents with hydrogen halide and halogen HAP emissions, and recordkeeping requirements for Group 2 applicability or compliance are still required (*e.g.*, the requirement in § 63.2525(e)(3) and (4) to track the number of batches produced and calculate rolling annual emissions for processes with Group 2 batch process vents).

\* \* \* \* \*

(e) \* \* \* \* \*

(1) Except when complying with § 63.2485, if you reduce organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices (except a flare) or recovery devices, you must meet the requirements of paragraph (e)(4) of this section, and the requirements of § 63.982(c) and the requirements referenced therein.

(2) Except as specified in paragraph (e)(5) of this section or except when complying with § 63.2485, if you reduce organic HAP emissions by venting emissions through a closed-vent system to a flare, you must meet the requirements of paragraph (e)(4) of this section, and the requirements of § 63.982(b) and the requirements referenced therein.

(3) Except as specified in paragraphs (e)(3)(i) and (ii) of this section, if you use a halogen reduction device to reduce hydrogen halide and halogen HAP emissions from halogenated vent streams, you must meet the requirements of paragraph (e)(4) of this section, and the requirements of § 63.994 and the requirements referenced therein. If you use a halogen reduction device before a combustion

device, you must determine the halogen atom emission rate prior to the combustion device according to the procedures in § 63.115(d)(2)(v).

(i) Beginning on and after October 13, 2020, performance test reports must be submitted according to the procedures in § 63.2520(f).

(ii) If you use a halogen reduction device other than a scrubber, then you must submit procedures for establishing monitoring parameters to the Administrator as part of your precompliance report as specified in § 63.2520(c)(8).

(4) Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (e)(4)(i) through (xvi) of this section do not apply when demonstrating compliance with subpart SS of this part.

(i) The phrase “Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 63.983(a)(3) of subpart SS.

(ii) The second sentence of § 63.983(a)(5) of subpart SS.

(iii) The phrase “except during periods of start-up, shutdown and malfunction as specified in the referencing subpart” in § 63.984(a) of subpart SS.

(iv) The phrase “except during periods of start-up, shutdown, and malfunction as specified in the referencing subpart” in § 63.985(a) of subpart SS.

(v) The phrase “other than start-ups, shutdowns, or malfunctions” in § 63.994(c)(1)(ii)(D) of subpart SS.

(vi) Section 63.996(c)(2)(ii) of subpart SS.

(vii) The last sentence of § 63.997(e)(1)(i) of subpart SS.

(viii) Section 63.998(b)(2)(iii) of subpart SS.

(ix) The phrase “other than start-ups, shutdowns or malfunctions” in § 63.998(b)(5)(i)(A) of subpart SS.

(x) The phrase “other than a start-up, shutdown, or malfunction” from § 63.998(b)(5)(i)(B)(3) of subpart SS.

(xi) The phrase “other than start-ups, shutdowns or malfunctions” in § 63.998(b)(5)(i)(C) of subpart SS.

(xii) The phrase “other than a start-up, shutdown, or malfunction” from § 63.998(b)(5)(ii)(C) of subpart SS.

(xiii) The phrase “except as provided in paragraphs (b)(6)(i)(A) and (B) of this section” in § 63.998(b)(6)(i) of subpart SS.

(xiv) The second sentence of § 63.998(b)(6)(ii) of subpart SS.

(xv) Section 63.998(c)(1)(ii)(D), (E), (F), and (G) of subpart SS.

(xvi) Section 63.998(d)(3) of subpart SS.

(5) For any flare that is used to reduce organic HAP emissions from an MCPU, you may elect to comply with the requirements in this paragraph in lieu of the requirements of § 63.982(b) and the requirements referenced therein.

However, beginning no later than the compliance dates specified in § 63.2445(g), paragraphs (e)(2) and (f) of this section no longer apply to flares that control ethylene oxide emissions from affected sources in ethylene oxide service as defined in § 63.2550 and flares used to control emissions from MCPUs that produce olefins or polyolefins. Instead, if you reduce organic HAP emissions by venting emissions through a closed-vent system to a steam-assisted, air-assisted, non-assisted, or pressure-assisted multi-point flare that controls ethylene oxide emissions from affected sources in ethylene oxide service as defined in § 63.2550 or is used to control emissions from an MCPU that produces olefins or polyolefins, then you must meet the applicable requirements for flares as specified in §§ 63.670 and 63.671 of subpart CC, including the provisions in Tables 12 and 13 to subpart CC of this part, except as specified in paragraphs (e)(5)(i) through (xiii) of this section. This requirement in this paragraph (e)(5) also applies to any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis. For purposes of compliance with this paragraph (e)(5), the following terms are defined in § 63.641 of subpart CC: Assist air, assist steam, center steam, combustion zone, combustion zone gas, flare, flare purge gas, flare supplemental gas, flare sweep gas, flare vent gas, lower steam, net heating value, perimeter assist air, pilot gas, premix assist air, total steam, and upper steam. Also, for purposes of compliance with this paragraph (e)(5), “MCPUs that produces olefins or polyolefins” includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

(i) When determining compliance with the pilot flame requirements specified in § 63.670(b) and (g), substitute “pilot flame or flare flame” for each occurrence of “pilot flame.”

(ii) When determining compliance with the flare tip velocity and combustion zone operating limits specified in § 63.670(d) and (e), the requirement effectively applies starting with the 15-minute block that includes a full 15 minutes of the flaring event. You are required to demonstrate compliance with the velocity and NHVcz requirements starting with the block that contains the fifteenth minute of a flaring event. You are not required to demonstrate compliance for the previous 15-minute block in which the event started and contained only a fraction of flow.

(iii) Instead of complying with paragraph (o)(2)(i) of § 63.670 of subpart CC, you must develop and implement the flare management plan no later than the compliance dates specified in § 63.2445(g).

(iv) Instead of complying with paragraph (o)(2)(iii) of § 63.670 of subpart CC, if required to develop a flare management plan and submit it to the Administrator, then you must also submit all versions of the plan in portable document format (PDF) to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA’s Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as confidential business information (CBI). Anything submitted using CEDRI cannot later be claimed to be CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim, submit a version with the CBI omitted via CEDRI. A complete plan, including information claimed to be CBI and clearly marked as CBI, must be mailed to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, CORE CBI Office, U.S. EPA Mailroom (C404-02), Attention: Miscellaneous Organic Chemical Manufacturing Sector Lead, 4930 Old Page Rd., Durham, NC 27703. All CBI claims must be asserted at the time of submission. Furthermore, under CAA section 114(c) emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

(v) Section 63.670(o)(3)(ii) of subpart CC and all references to § 63.670(o)(3)(ii) of subpart CC do not apply. Instead, the owner or operator

must comply with the maximum flare tip velocity operating limit at all times.

(vi) Substitute "MCPU" for each occurrence of "petroleum refinery."

(vii) Each occurrence of "refinery" does not apply.

(viii) If a pressure-assisted multi-point flare is used as a control device, then you must meet the following conditions:

(A) You are not required to comply with the flare tip velocity requirements in paragraph (d) and (k) of § 63.670 of subpart CC;

(B) You must substitute "800" for each occurrence of "270" in paragraph (e) of § 63.670 of subpart CC;

(C) You must determine the 15-minute block average NHVvg using only the direct calculation method specified in paragraph (l)(5)(ii) of § 63.670 of subpart CC;

(D) Instead of complying with paragraph (b) and (g) of § 63.670 of subpart CC, if a pressure-assisted multi-point flare uses cross-lighting on a stage of burners rather than having an individual pilot flame on each burner, then you must operate each stage of the pressure-assisted multi-point flare with a flame present at all times when regulated material is routed to that stage of burners. Each stage of burners that cross-lights in the pressure-assisted multi-point flare must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners. Each 15-minute block during which there is at least one minute where no pilot flame is present on a stage of burners when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The pilot flame(s) on each stage of burners that use cross-lighting must be continuously monitored by a thermocouple or any other equivalent device used to detect the presence of a flame;

(E) Unless you choose to conduct a cross-light performance demonstration as specified in this paragraph (e)(5)(viii)(E), you must ensure that if a stage of burners on the flare uses cross-lighting, that the distance between any two burners in series on that stage is no more than 6 feet when measured from the center of one burner to the next burner. A distance greater than 6 feet between any two burners in series may be used provided you conduct a performance demonstration that confirms the pressure-assisted multi-point flare will cross-light a minimum of three burners and the spacing between the burners and location of the pilot flame must be representative of the

projected installation. The compliance demonstration must be approved by the permitting authority and a copy of this approval must be maintained onsite.

The compliance demonstration report must include: A protocol describing the test methodology used, associated test method QA/QC parameters, the waste gas composition and NHVcz of the gas tested, the velocity of the waste gas tested, the pressure-assisted multi-point flare burner tip pressure, the time, length, and duration of the test, records of whether a successful cross-light was observed over all of the burners and the length of time it took for the burners to cross-light, records of maintaining a stable flame after a successful cross-light and the duration for which this was observed, records of any smoking events during the cross-light, waste gas temperature, meteorological conditions (e.g., ambient temperature, barometric pressure, wind speed and direction, and relative humidity), and whether there were any observed flare flameouts; and

(F) You must install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flare operates within the proper range of conditions as specified by the manufacturer. The pressure monitor must meet the requirements in Table 13 to subpart CC of this part.

(G) If a pressure-assisted multi-point flare is operating under the requirements of an approved alternative means of emission limitations, you must either continue to comply with the terms of the alternative means of emission limitations or comply with the provisions in paragraphs (e)(5)(viii)(A) through (F) of this section.

(ix) If you choose to determine compositional analysis for net heating value with a continuous process mass spectrometer, then you must comply with the requirements specified in paragraphs (e)(5)(ix)(A) through (G) of this section.

(A) You must meet the requirements in § 63.671(e)(2). You may augment the minimum list of calibration gas components found in § 63.671(e)(2) with compounds found during a pre-survey or known to be in the gas through process knowledge.

(B) Calibration gas cylinders must be certified to an accuracy of 2 percent and traceable to National Institute of Standards and Technology (NIST) standards.

(C) For unknown gas components that have similar analytical mass fragments to calibration compounds, you may report the unknowns as an increase in the overlapped calibration gas

compound. For unknown compounds that produce mass fragments that do not overlap calibration compounds, you may use the response factor for the nearest molecular weight hydrocarbon in the calibration mix to quantify the unknown component's NHVvg.

(D) You may use the response factor for n-pentane to quantify any unknown components detected with a higher molecular weight than n-pentane.

(E) You must perform an initial calibration to identify mass fragment overlap and response factors for the target compounds.

(F) You must meet applicable requirements in Performance Specification 9 of 40 CFR part 60, appendix B, for continuous monitoring system acceptance including, but not limited to, performing an initial multi-point calibration check at three concentrations following the procedure in Section 10.1 and performing the periodic calibration requirements listed for gas chromatographs in Table 13 to subpart CC of this part, for the process mass spectrometer. You may use the alternative sampling line temperature allowed under Net Heating Value by Gas Chromatograph in Table 13 to subpart CC of this part.

(G) The average instrument calibration error (CE) for each calibration compound at any calibration concentration must not differ by more than 10 percent from the certified cylinder gas value. The CE for each component in the calibration blend must be calculated using Equation 1 to this paragraph (e)(5)(ix)(G).

$$CE = \frac{C_m - C_a}{C_a} \times 100 \text{ (Eq. 1)}$$

Where:

C<sub>m</sub> = Average instrument response (ppm).  
C<sub>a</sub> = Certified cylinder gas value (ppm).

(x) If you use a gas chromatograph or mass spectrometer for compositional analysis for net heating value, then you may choose to use the CE of NHV<sub>measured</sub> versus the cylinder tag value NHV as the measure of agreement for daily calibration and quarterly audits in lieu of determining the compound-specific CE. The CE for NHV at any calibration level must not differ by more than 10 percent from the certified cylinder gas value. The CE for must be calculated using Equation 2 to this paragraph (e)(5)(x).

$$CE = \frac{NHV_{measured} - NHV_a}{NHV_a} \times 100 \text{ (Eq. 2)}$$

Where:

NHV<sub>measured</sub> = Average instrument response (Btu/scf).

NHV<sub>a</sub> = Certified cylinder gas value (Btu/scf).

(xi) Instead of complying with paragraph (q) of § 63.670 of subpart CC, you must comply with the reporting requirements specified in § 63.2520(d)(3) and (e)(11).

(xii) Instead of complying with paragraph (p) of § 63.670 of subpart CC, you must keep the flare monitoring records specified in § 63.2525(m).

(xiii) You may elect to comply with the alternative means of emissions limitation requirements specified in paragraph (r) of § 63.670 of subpart CC in lieu of the requirements in paragraphs (d) through (f) of § 63.670 of subpart CC, as applicable. However, instead of complying with paragraph (r)(3)(iii) of § 63.670 of subpart CC, you must also submit the alternative means of emissions limitation request to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (C404-02), Attention: Miscellaneous Organic Chemical Manufacturing Sector Lead, 4930 Old Page Rd., Durham, NC 27703.

(6) Beginning no later than the compliance dates specified in § 63.2445(g), the use of a bypass line at any time on a closed vent system to divert emissions subject to the requirements in Tables 1 through 7 to this subpart to the atmosphere or to a control device not meeting the requirements specified in Tables 1 through 7 to this subpart is an emissions standards deviation. You must also comply with the requirements specified in paragraphs (e)(6)(i) through (v) of this section, as applicable:

(i) If you are subject to the bypass monitoring requirements of § 63.148(f) of subpart G, then you must continue to comply with the requirements in § 63.148(f) of subpart G and the recordkeeping and reporting requirements in §§ 63.148(j)(2) and (3) of subpart G, and (h)(3) of subpart G, in addition to the applicable requirements specified in § 63.2485(q), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).

(ii) If you are subject to the bypass monitoring requirements of § 63.172(j) of subpart H, then you must continue to comply with the requirements in § 63.172(j) of subpart H and the recordkeeping and reporting requirements in § 63.118(a)(3) and (4), and (f)(3) and (4) of subpart G, in addition to the applicable requirements specified in §§ 63.2480(f) and 63.2485(q), the recordkeeping requirements specified in § 63.2525(n),

and the reporting requirements specified in § 63.2520(e)(12).

(iii) If you are subject to the bypass monitoring requirements of § 63.983(a)(3) of subpart SS, then you must continue to comply with the requirements in § 63.983(a)(3) of subpart SS and the recordkeeping and reporting requirements in §§ 63.998(d)(1)(ii) and 63.999(c)(2) of subpart SS, in addition to the requirements specified in § 63.2450(e)(4), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).

(iv) If you are subject to the bypass monitoring requirements of § 65.143(a)(3) of this chapter, then you must continue to comply with the requirements in § 65.143(a)(3) and the recordkeeping and reporting requirements in §§ 65.163(a)(1) and 65.166(b) of this chapter; in addition to the applicable requirements specified in § 63.2480(f), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).

(v) For purposes of compliance with this paragraph (e)(6), §§ 63.148(f)(3) of subpart G, and 63.172(j)(3) of subpart H, the phrase “Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 63.983(a)(3) of subpart SS, and the phrase “Except for pressure relief devices needed for safety purposes, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 65.143(a)(3) of this chapter do not apply; instead, the exemptions specified in paragraphs (e)(6)(v)(A) and (B) of this section apply.

(A) Except for pressure relief devices subject to § 63.2480(e)(4), equipment such as low leg drains and equipment subject to the requirements specified in § 63.2480 are not subject to this paragraph (e)(6).

(B) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in 40 CFR 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as 40 CFR 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (e)(6).

(7) Beginning no later than the compliance dates specified in § 63.2445(g), if you reduce organic HAP emissions by venting emissions through a closed-vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then you must comply with paragraphs (e)(4) and (6) of this section and the requirements in

§ 63.983, and you must install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (e)(7)(i) through (iii) of this section.

(i) Conduct an initial performance test or design evaluation of the adsorber and establish the breakthrough limit and adsorber bed life.

(ii) Monitor the HAP or total organic compound (TOC) concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (e)(7)(iii)(B) of this section. You must measure the concentration of HAP or TOC using either a portable analyzer, in accordance with Method 21 of 40 CFR part 60, appendix A-7, using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of 40 CFR part 60, appendix A-7, using methane, propane, or the primary HAP being controlled as the calibration gas.

(iii) Comply with paragraph (e)(7)(iii)(A) of this section, and comply with the monitoring frequency according to paragraph (e)(7)(iii)(B) of this section.

(A) The first adsorber in series must be replaced immediately when breakthrough, as defined in § 63.2550(i), is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph (e)(7)(iii)(A), “immediately” means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons. You must monitor at the outlet of the first adsorber within 3 days of replacement to confirm it is performing properly.

(B) Based on the adsorber bed life established according to paragraph (e)(7)(i) of this section and the date the adsorbent was last replaced, conduct monitoring to detect breakthrough at least monthly if the adsorbent has more than 2 months of life remaining, at least weekly if the adsorbent has between 2 months and 2 weeks of life remaining, and at least daily if the adsorbent has 2 weeks or less of life remaining.

(f) *Requirements for flare compliance assessments.* Except as specified in paragraph (e)(5) of this section, you must comply with paragraphs (f)(1) and (2) of this section.

\* \* \* \* \*

(g) *Requirements for performance tests.* The requirements specified in paragraphs (g)(1) through (7) of this

section apply instead of or in addition to the requirements specified in subpart SS of this part.

\* \* \* \* \*

(3) \* \* \*

(ii) If you elect to comply with the outlet TOC concentration emission limits in Tables 1 through 7 to this subpart, and the uncontrolled or inlet gas stream to the control device contains greater than 10 percent (volume concentration) carbon disulfide, you must use Method 18 or Method 15 of 40 CFR part 60, appendix A, to separately determine the carbon disulfide concentration. Calculate the total HAP or TOC emissions by totaling the carbon disulfide emissions measured using Method 18 or 15 of 40 CFR part 60, appendix A, and the other HAP emissions measured using Method 18 or 25A of 40 CFR part 60, appendix A.

\* \* \* \* \*

(5) Section 63.997(c)(1) does not apply. For the purposes of this subpart, results of all initial compliance demonstrations must be included in the notification of compliance status report, which is due 150 days after the compliance date, as specified in § 63.2520(d)(1). If the initial compliance demonstration includes a performance test and the results are submitted electronically via CEDRI in accordance with § 63.2520(f), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.

(6) Beginning no later than the compliance dates specified in § 63.2445(g), in lieu of the requirements specified in § 63.7(e)(1) of subpart A you must conduct performance tests under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown. You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(7) Comply with the requirements in § 63.2450(e)(4), as applicable.

(h) *Design evaluation.* To determine the percent reduction of a small control device that is used to comply with an emission limit specified in Table 1, 2, 3, or 5 to this subpart, you may elect to conduct a design evaluation as specified in § 63.1257(a)(1) instead of a performance test as specified in subpart SS of this part. You must establish the value(s) and basis for the operating limits as part of the design evaluation. For continuous process vents, the design evaluation must be conducted at maximum representative operating conditions for the process, unless the Administrator specifies or approves alternate operating conditions. For transfer racks, the design evaluation must demonstrate that the control device achieves the required control efficiency during the reasonably expected maximum transfer loading rate. Beginning no later than the compliance dates specified in § 63.2445(i), this paragraph (h) does not apply to process vents in ethylene oxide service as defined in § 63.2550.

(i) *Outlet concentration correction for combustion devices.* Except as specified in paragraph (i)(3) of this section, when § 63.997(e)(2)(iii)(C) requires you to correct the measured concentration at the outlet of a combustion device to 3-percent oxygen if you add supplemental combustion air, the requirements in either paragraph (i)(1) or (2) of this section apply for the purposes of this subpart.

\* \* \* \* \*

(2) You must correct the measured concentration for supplemental gases using Equation 1 in § 63.2460(c)(6); you may use process knowledge and representative operating data to determine the fraction of the total flow due to supplemental gas.

(3) Beginning no later than the compliance dates specified in § 63.2445(g), paragraphs (i)(1) and (2) of this section no longer apply. Instead, when § 63.997(e)(2)(iii)(C) requires you to correct the measured concentration at the outlet of a combustion device to 3-percent oxygen if you add supplemental combustion air, you must follow the procedures in § 63.997(e)(2)(iii)(C) to perform the concentration correction, except you may also use Method 3A of 40 CFR part 60, appendix A-2, to determine the oxygen concentration.

(j) *Continuous emissions monitoring systems.* Each continuous emissions monitoring system (CEMS) must be installed, operated, and maintained according to the requirements in § 63.8 of subpart A and paragraphs (j)(1) through (6) of this section.

(1) Each CEMS must be installed, operated, and maintained according to

the applicable Performance Specification of 40 CFR part 60, appendix B, and the applicable Quality Assurance Procedures of 40 CFR part 60, appendix F, and according to paragraph (j)(2) of this section, except as specified in paragraph (j)(1)(i) of this section. For any CEMS meeting Performance Specification 8 of 40 CFR part 60, appendix B, you must also comply with procedure 1 of 40 CFR part 60, appendix F. Locate the sampling probe or other interface at a measurement location such that you obtain representative measurements of emissions from the regulated source. For CEMS installed after August 12, 2020, conduct a performance evaluation of each CEMS within 180 days of installation of the monitoring system.

(i) If you wish to use a CEMS other than a Fourier Transform Infrared Spectroscopy (FTIR) meeting the requirements of Performance Specification 15 of 40 CFR part 60, appendix B, to measure hydrogen halide, other than hydrogen chloride, and halogen HAP or CEMS meeting the requirements of Performance Specification 18 of 40 CFR part 60, appendix B, to measure hydrogen chloride before we promulgate a Performance Specification for such CEMS, you must prepare a monitoring plan and submit it for approval in accordance with the procedures specified in § 63.8 of subpart A.

\* \* \* \* \*

(2) \* \* \*

(iii) For CEMS meeting Performance Specification 8 of 40 CFR part 60, appendix B, used to monitor performance of a noncombustion device, determine the predominant organic HAP using either process knowledge or the screening procedures of Method 18 of 40 CFR part 60, appendix A-6, on the control device inlet stream, calibrate the monitor on the predominant organic HAP, and report the results as  $C_1$ . Use Method 18 of 40 CFR part 60, appendix A-6, Method 320 of appendix A to this part, ASTM D6420-18 (incorporated by reference, see § 63.14), or any approved alternative as the reference method for the relative accuracy tests, and report the results as  $C_1$ .

(3) You must conduct a performance evaluation of each CEMS according to the requirements in § 63.8 of subpart A and according to the applicable Performance Specification of 40 CFR part 60, appendix B, except that the schedule in § 63.8(e)(4) of subpart A does not apply, and before October 13, 2020, the results of the performance evaluation must be included in the

notification of compliance status report. Unless otherwise specified in this subpart, beginning on and after October 13, 2020, the results of the performance evaluation must be submitted in accordance with § 63.2520(g).

(4) The CEMS data must be reduced to operating day or operating block averages computed using valid data consistent with the data availability requirements specified in § 63.999(c)(6)(i)(B) through (D), except monitoring data also are sufficient to constitute a valid hour of data if measured values are available for at least two of the 15-minute periods during an hour when calibration, quality assurance, or maintenance activities are being performed. An operating block is a period of time from the beginning to end of batch operations within a process. Operating block averages may be used only for batch process vent data. In computing operating day or operating block averages to determine compliance with this subpart, you must exclude monitoring data recorded during CEMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, or other quality assurance activities. Out-of-control periods are as specified in § 63.8(c)(7) of subpart A.

(5) If you add supplemental gases, you must comply with paragraphs (j)(5)(i) and (ii) of this section.

(i) Except as specified in paragraph (j)(5)(ii) of this section, correct the measured concentrations in accordance with paragraph (i) of this section and § 63.2460(c)(6).

(ii) Beginning no later than the compliance dates specified in § 63.2445(g), you must use Performance Specification 3 of 40 CFR part 60, appendix B, to certify your oxygen CEMS, and you must comply with procedure 1 of 40 CFR part 60, appendix F. Use Method 3A of 40 CFR part 60, appendix A-2, as the reference method when conducting a relative accuracy test audit.

(6) Beginning no later than the compliance dates specified in § 63.2445(g), in lieu of the requirements specified in § 63.8(d)(3) of subpart A you must keep the written procedures required by § 63.8(d)(2) of subpart A on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, you must keep previous (*i.e.*, superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request,

by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under § 63.8(d)(2) of subpart A. In addition to the information required in § 63.8(d)(2) of subpart A, your written procedures for CEMS must include the information in paragraphs (j)(6)(i) through (vi) of this section:

(i) Description of CEMS installation location.

(ii) Description of the monitoring equipment, including the manufacturer and model number for all monitoring equipment components and the span of the analyzer.

(iii) Routine quality control and assurance procedures.

(iv) Conditions that would trigger a CEMS performance evaluation, which must include, at a minimum, a newly installed CEMS; a process change that is expected to affect the performance of the CEMS; and the Administrator's request for a performance evaluation under section 114 of the Clean Air Act.

(v) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1) and (3), (c)(4)(ii), and (c)(7) and (8) of subpart A;

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) and (e)(1) of subpart A.

(k) *Continuous parameter monitoring.* The provisions in paragraphs (k)(1) through (8) of this section apply in addition to the requirements for continuous parameter monitoring system (CPMS) in subpart SS of this part.

(1) You must comply with paragraphs (k)(1)(i) and (ii) of this section.

(i) Except as specified in paragraph (k)(1)(ii) of this section, record the results of each calibration check and all maintenance performed on the CPMS as specified in § 63.998(c)(1)(ii)(A).

(ii) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (k)(1)(i) of this section no longer applies. Instead, you must record the results of each calibration check and all maintenance performed on the CPMS as specified in § 63.998(c)(1)(ii)(A), except you must record all maintenance, not just preventative maintenance.

(4) \* \* \*

(iv) Recording the downstream temperature and temperature difference across the catalyst bed as specified in § 63.998(a)(2)(ii)(B)(2) and (c)(2)(ii) is not required.

\* \* \* \* \*

(7) Beginning no later than the compliance dates specified in § 63.2445(g), the manufacturer's specifications or your written procedures must include a schedule for calibrations, preventative maintenance procedures, a schedule for preventative maintenance, and corrective actions to be taken if a calibration fails. If a CPMS calibration fails, the CPMS is considered to be inoperative until you take corrective action and the system passes calibration. You must record the nature and cause of instances when the CPMS is inoperative and the corrective action taken.

(8) You must comply with the requirements in paragraph (e)(4) of this section, as applicable.

\* \* \* \* \*

(p) *Original safety device requirements.* Except as specified in paragraph (t) of this section, opening a safety device, as defined in § 63.2550, is allowed at any time conditions require it to avoid unsafe conditions.

\* \* \* \* \*

(r) *Surge control vessels and bottoms receivers.* For each surge control vessel or bottoms receiver that meets the capacity and vapor pressure thresholds for a Group 1 storage tank, you must meet emission limits and work practice standards specified in Table 4 to this subpart. Beginning no later than the compliance dates specified in § 63.2445(i), for each surge control vessel and bottoms receiver in ethylene oxide service as defined in § 63.2550, you must also meet the applicable process vent requirements specified in §§ 63.2492 and 63.2493(a) through (c).

\* \* \* \* \*

(t) *New safety device requirements.* Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (p) of this section no longer applies. Instead, you must comply with the requirements specified in § 63.2480(e).

(u) *General duty.* Beginning no later than the compliance dates specified in § 63.2445(g), at all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on

information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(v) *Maintenance vents.* Beginning no later than the compliance dates specified in § 63.2445(g), you may designate a process vent as a maintenance vent if the vent is only used as a result of startup, shutdown, maintenance, or inspection of equipment where equipment is emptied, depressurized, degassed, or placed into service. You must comply with the applicable requirements in paragraphs (v)(1) through (3) of this section for each maintenance vent. Any vent designated as a maintenance vent is only subject to the maintenance vent provisions in this paragraph (v) and the associated recordkeeping and reporting requirements in §§ 63.2525(p) and 63.2520(e)(14), respectively. You do not need to designate a maintenance vent as a Group 1 or Group 2 process vent nor identify maintenance vents in a Notification of Compliance Status report.

(1) Prior to venting to the atmosphere, remove process liquids from the equipment as much as practical and depressurize the equipment to either: A flare meeting the requirements of paragraph (e)(2) or (5) of this section, as applicable, or a non-flare control device meeting the requirements in paragraph (e)(4) of this section and the requirements specified in § 63.982(c)(2) of subpart SS until one of the following conditions, as applicable, is met.

(i) The vapor in the equipment served by the maintenance vent has a lower explosive limit (LEL) of less than 10 percent and has an outlet concentration less than or equal to 20 ppmv hydrogen halide and halogen HAP.

(ii) If there is no ability to measure the LEL of the vapor in the equipment based on the design of the equipment, the pressure in the equipment served by the maintenance vent is reduced to 5 pounds per square inch gauge (psig) or less. Upon opening the maintenance vent, active purging of the equipment cannot be used until the LEL of the vapors in the maintenance vent (or inside the equipment if the maintenance is a hatch or similar type of opening) is less than 10 percent.

(iii) The equipment served by the maintenance vent contains less than 50 pounds of total volatile organic compounds (VOC).

(iv) If, after applying best practices to isolate and purge equipment served by a maintenance vent, none of the

applicable criterion in paragraphs (v)(1)(i) through (iii) of this section can be met prior to installing or removing a blind flange or similar equipment blind, then the pressure in the equipment served by the maintenance vent must be reduced to 2 psig or less before installing or removing the equipment blind. During installation or removal of the equipment blind, active purging of the equipment may be used provided the equipment pressure at the location where purge gas is introduced remains at 2 psig or less.

(2) Except for maintenance vents complying with the alternative in paragraph (v)(1)(iii) of this section, you must determine the LEL or, if applicable, equipment pressure using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications.

(3) For maintenance vents complying with the alternative in paragraph (v)(1)(iii) of this section, you must determine mass of VOC in the equipment served by the maintenance vent based on the equipment size and contents after considering any contents drained or purged from the equipment. Equipment size may be determined from equipment design specifications. Equipment contents may be determined using process knowledge.

■ 6. Section 63.2455 is amended by revising paragraph (a) to read as follows:

**§ 63.2455 What requirements must I meet for continuous process vents?**

(a) You must meet each emission limit in Table 1 to this subpart that applies to your continuous process vents, and you must meet each applicable requirement specified in paragraphs (b) through (c) of this section and §§ 63.2492 and 63.2493(a) through (c).

\* \* \* \* \*

■ 7. Section 63.2460 is amended by revising paragraphs (a), (b)(5) introductory text, (b)(5)(iii), (b)(6) introductory text, (c)(2)(i), (ii), and (v), the first sentence of (c)(6) introductory text, (c)(9) introductory text, (c)(9)(ii) introductory text, (c)(9)(ii)(D), and (c)(9)(iii) and (iv) to read as follows:

**§ 63.2460 What requirements must I meet for batch process vents?**

(a) *General.* You must meet each emission limit in Table 2 to this subpart that applies to you, and you must meet each applicable requirement specified in paragraphs (b) and (c) of this section and §§ 63.2492 and 63.2493(a) through (c).

(b) \* \* \*

(5) You may elect to designate the batch process vents within a process as Group 1 and not calculate uncontrolled emissions if you comply with one of the situations in paragraph (b)(5)(i), (ii), or (iii) of this section.

\* \* \* \* \*

(iii) If you comply with an emission limit using a flare that meets the requirements specified in § 63.987 or § 63.2450(e)(5), as applicable.

(6) You may change from Group 2 to Group 1 in accordance with either paragraph (b)(6)(i) or (ii) of this section. Before October 13, 2020, you must comply with the requirements of this section and submit the test report. Beginning on and after October 13, 2020, you must comply with the requirements of this section and submit the performance test report for the demonstration required in § 63.1257(b)(8) in accordance with § 63.2520(f).

\* \* \* \* \*

(c) \* \* \*  
(2) \* \* \*

(i) To demonstrate initial compliance with a percent reduction emission limit in Table 2 to this subpart, you must compare the sums of the controlled and uncontrolled emissions for the applicable Group 1 batch process vents within the process, and show that the specified reduction is met. This requirement does not apply if you comply with the emission limits of Table 2 to this subpart by using a flare that meets the requirements of § 63.987 or 63.2450(e)(5), as applicable.

(ii) When you conduct a performance test or design evaluation for a non-flare control device used to control emissions from batch process vents, you must establish emission profiles and conduct the test under worst-case conditions according to § 63.1257(b)(8) instead of under normal operating conditions as specified in § 63.7(e)(1) of subpart A or the conditions as specified in § 63.2450(g)(6). The requirements in § 63.997(e)(1)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for batch process vents. For purposes of this subpart, references in § 63.997(b)(1) to "methods specified in § 63.997(e)" include the methods specified in § 63.1257(b)(8).

\* \* \* \* \*

(v) If a process condenser is used for boiling operations in which HAP (not as an impurity) is heated to the boiling point, you must demonstrate that it is properly operated according to the procedures specified in § 63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration

must occur only during the boiling operation. The reference in § 63.1257(d)(3)(iii)(B) to the alternative standard in § 63.1254(c) means § 63.2505 for the purposes of this subpart. As an alternative to measuring the exhaust gas temperature, as required by § 63.1257(d)(3)(iii)(B), you may elect to measure the liquid temperature in the receiver.

\* \* \* \* \*

(6) *Outlet concentration correction for supplemental gases.* If you use a control device other than a combustion device to comply with a TOC, organic HAP, or hydrogen halide and halogen HAP outlet concentration emission limit for batch process vents, you must correct the actual concentration for supplemental gases using Equation 1 to this paragraph (e)(6); you may use process knowledge and representative operating data to determine the fraction of the total flow due to supplemental gas.

\* \* \* \* \*

(9) *Requirements for a biofilter.* If you use a biofilter to meet either the 95-percent reduction requirement or outlet concentration requirement specified in Table 2 to this subpart, you must meet the requirements specified in paragraphs (c)(9)(i) through (vi) of this section.

\* \* \* \* \*

(ii) *Performance tests.* To demonstrate initial compliance, you must conduct a performance test according to the procedures in §§ 63.2450(g) and 63.997 of subpart SS, and paragraphs (c)(9)(ii)(A) through (D) of this section. The design evaluation option for small control devices is not applicable if you use a biofilter.

\* \* \* \* \*

(D) Before October 13, 2020, submit a performance test report as specified in § 63.999(a)(2)(i) and (ii) and include the records from paragraph (c)(9)(ii)(B) of this section. Beginning on and after October 13, 2020, you must submit a performance test report as specified in § 63.2520(f).

(iii) *Monitoring requirements.* Use either a biofilter bed temperature monitoring device (or multiple devices) capable of providing a continuous record or an organic monitoring device capable of providing a continuous record. Comply with the requirements in § 63.2450(e)(4), the general requirements for monitoring in § 63.996, and keep records of temperature or other parameter monitoring results as specified in § 63.998(b) and (c), as applicable. If you monitor temperature, the operating temperature range must be based on only the temperatures

measured during the performance test; these data may not be supplemented by engineering assessments or manufacturer's recommendations as otherwise allowed in § 63.999(b)(3)(ii)(A). If you establish the operating range (minimum and maximum temperatures) using data from previous performance tests in accordance with § 63.996(c)(6), replacement of the biofilter media with the same type of media is not considered a process change under § 63.997(b)(1). You may expand your biofilter bed temperature operating range by conducting a repeat performance test that demonstrates compliance with the 95-percent reduction requirement or outlet concentration limit, as applicable.

(iv) *Repeat performance tests.* You must conduct a repeat performance test using the applicable methods specified in §§ 63.2450(g) and 63.997 within 2 years following the previous performance test and within 150 days after each replacement of any portion of the biofilter bed media with a different type of media or each replacement of more than 50 percent (by volume) of the biofilter bed media with the same type of media.

■ 8. Section 63.2465 is amended by revising paragraphs (c) introductory text and (d)(2) to read as follows:

**§ 63.2465 What requirements must I meet for process vents that emit hydrogen halide and halogen HAP or HAP metals?**

\* \* \* \* \*

(c) If collective uncontrolled hydrogen halide and halogen HAP emissions from the process vents within a process are greater than or equal to 1,000 pounds per year (lb/yr), you must comply with the requirements in § 63.2450(e)(4) and the requirements of § 63.994 and the requirements referenced therein, except as specified in paragraphs (c)(1) through (3) of this section.

\* \* \* \* \*

(d) \* \* \*

(2) Conduct an initial performance test of each control device that is used to comply with the emission limit for HAP metals specified in Table 3 to this subpart. Conduct the performance test according to the procedures in §§ 63.2450(g) and 63.997. Use Method 29 of 40 CFR part 60, appendix A, to determine the HAP metals at the inlet and outlet of each control device, or use Method 5 of 40 CFR part 60, appendix A, to determine the total particulate matter (PM) at the inlet and outlet of each control device. You may use ASTM D6784–02 (Reapproved 2008) (incorporated by reference, see § 63.14) as an alternative to Method 29 (portion

for mercury only) as a method for measuring mercury concentrations of 0.5 to 100 micrograms per standard cubic meter. You have demonstrated initial compliance if the overall reduction of either HAP metals or total PM from the process is greater than or equal to 97 percent by weight.

\* \* \* \* \*

■ 9. Section 63.2470 is amended by revising paragraph (a), adding paragraph (b), revising paragraphs (c) and (e)(3), and adding paragraph (f) to read as follows:

**§ 63.2470 What requirements must I meet for storage tanks?**

(a) *General.* You must meet each emission limit in Table 4 to this subpart that applies to your storage tanks, and except as specified in paragraph (b) of this section, you must also meet each applicable requirement specified in paragraphs (c) through (f) of this section and §§ 63.2492 and 63.2493(a) through (c).

(b) *General for storage tanks in ethylene oxide service.* On and after the compliance dates specified in § 63.2445(i), paragraphs (d) and (e) of this section do not apply to storage tanks in ethylene oxide service as defined in § 63.2550.

(c) *Exceptions to subparts SS and WW of this part.* (1) Except as specified in paragraph (c)(4)(ii) of this section, if you conduct a performance test or design evaluation for a control device used to control emissions only from storage tanks, you must establish operating limits, conduct monitoring, and keep records using the same procedures as required in subpart SS of this part for control devices used to reduce emissions from process vents instead of the procedures specified in §§ 63.985(c), 63.998(d)(2)(i), and 63.999(b)(2). You must also comply with the requirements in § 63.2450(e)(4), as applicable.

(2) Except as specified in paragraph (c)(4) of this section, when the term “storage vessel” is used in subparts SS and WW of this part, the term “storage tank,” as defined in § 63.2550 applies for the purposes of this subpart.

(3) For adsorbers that cannot be regenerated or regenerative adsorbers that are regenerated offsite, you must comply with the monitoring requirements in § 63.2450(e)(7) in lieu of § 63.995(c).

(4) Beginning no later than the compliance dates specified in § 63.2445(i), you must comply with paragraphs (c)(4)(i) and (ii) of this section.

(i) The exemptions for “vessels storing organic liquids that contain HAP only as impurities” and “pressure

vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere” listed in the definition of “storage tank” in § 63.2550 do not apply for storage tanks in ethylene oxide service.

(ii) For storage tanks in ethylene oxide service as defined in § 63.2550, you may not use a design evaluation to determine the percent reduction of any control device that is used to comply with an emission limit specified in Table 4 to this subpart.

\* \* \* \* \*

(e) \* \* \*

(3) You may elect to set a pressure relief device to a value less than the 2.5 psig required in § 63.1253(f)(5) if you provide rationale in your notification of compliance status report explaining why the alternative value is sufficient to prevent breathing losses at all times.

\* \* \* \* \*

(f) *Storage tank degassing.* Beginning no later than the compliance dates specified in § 63.2445(g), for each storage tank subject to item 1 of Table 4 to this subpart, you must comply with paragraphs (f)(1) through (3) of this section during storage tank shutdown operations (*i.e.*, emptying and degassing of a storage tank) until the vapor space concentration in the storage tank is less than 10 percent of the LEL. You must determine the LEL using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer’s specifications.

(1) Remove liquids from the storage tank as much as practicable.

(2) Comply with one of the following:

(i) Reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare.

(ii) Reduce emissions of total organic HAP by 95 weight-percent by venting emissions through a closed vent system to any combination of non-flare control devices.

(iii) Reduce emissions of total organic HAP by routing emissions to a fuel gas system or process and meet the requirements specified in § 63.982(d) and the applicable requirements in § 63.2450(e)(4).

(3) Maintain records necessary to demonstrate compliance with the requirements in § 63.2450(u) including, if appropriate, records of existing standard site procedures used to empty and degas (deinventory) equipment for safety purposes.

■ 10. Section 63.2475 is amended by revising paragraph (a) to read as follows:

**§ 63.2475 What requirements must I meet for transfer racks?**

(a) You must comply with each emission limit and work practice standard in Table 5 to this subpart that applies to your transfer racks, and you must meet each applicable requirement in paragraph (b) of this section.

\* \* \* \* \*

■ 11. Section 63.2480 is amended by:

■ a. Revising paragraphs (a), (b) introductory text, and (b)(1), (2), and (5);

■ b. Adding paragraphs (b)(6) and (7);

■ c. Revising paragraphs (c) introductory text and (c)(5); and

■ d. Adding paragraphs (c)(10) and (11), (e), and (f).

The revisions and additions read as follows:

**§ 63.2480 What requirements must I meet for equipment leaks?**

(a) You must meet each requirement in Table 6 to this subpart that applies to your equipment leaks, except as specified in paragraphs (b) through (f) of this section. For each light liquid pump, valve, and connector in ethylene oxide service as defined in § 63.2550(i), you must also meet the applicable requirements specified in §§ 63.2492 and 63.2493(d) and (e).

(b) Except as specified in paragraphs (b)(6) and (7) of this section, if you comply with either subpart H or UU of this part, you may elect to comply with the provisions in paragraphs (b)(1) through (5) of this section as an alternative to the referenced provisions in subpart H or UU of this part.

(1) The requirements for pressure testing in § 63.178(b) or § 63.1036(b) may be applied to all processes, not just batch processes.

(2) For the purposes of this subpart, pressure testing for leaks in accordance with § 63.178(b) or § 63.1036(b) is not required after reconfiguration of an equipment train if flexible hose connections are the only disturbed equipment.

\* \* \* \* \*

(5) Except as specified in paragraph (b)(6) of this section, for pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source, you may elect to consider the leak definition that defines a leak to be 10,000 parts per million (ppm) or greater as an alternative to the values specified in § 63.1026(b)(2)(i) through (iii) or § 63.163(b)(2).

(6) Beginning no later than the compliance dates specified in § 63.2445(h), paragraph (b)(5) of this section no longer applies.

(7) For each piece of equipment that is subject to Table 6 to this subpart and

is also subject to periodic monitoring with EPA Method 21 of 40 CFR part 60, appendix A–7, and is added to an affected source after December 17, 2019, or replaces equipment at an affected source after December 17, 2019, you must initially monitor for leaks within 30 days after August 12, 2020, or initial startup of the equipment, whichever is later. Equipment that is designated as unsafe- or difficult-to-monitor is not subject to this paragraph (b)(7).

(c) Except as specified in paragraphs (c)(10) and (11) of this section, if you comply with 40 CFR part 65, subpart F, you may elect to comply with the provisions in paragraphs (c)(1) through (9) of this section as an alternative to the referenced provisions in 40 CFR part 65, subpart F.

\* \* \* \* \*

(5) Except as specified in paragraph (c)(10) of this section, for pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source, you may elect to consider the leak definition that defines a leak to be 10,000 ppm or greater as an alternative to the values specified in § 65.107(b)(2)(i) through (iii) of this chapter.

\* \* \* \* \*

(10) Beginning no later than the compliance dates specified in § 63.2445(h), paragraph (c)(5) of this section no longer applies.

(11) For each piece of equipment that is subject to Table 6 to this subpart and is also subject to periodic monitoring with EPA Method 21 of 40 CFR part 60, appendix A–7, and is added to an affected source after December 17, 2019, or replaces equipment at an affected source after December 17, 2019, you must initially monitor for leaks within 30 days after August 12, 2020, or initial startup of the equipment, whichever is later. Equipment that is designated as unsafe- or difficult-to-monitor is not subject to this paragraph (c)(11).

\* \* \* \* \*

(e) Beginning no later than the compliance dates specified in § 63.2445(g), except as specified in paragraph (e)(4) of this section, you must comply with the requirements specified in paragraphs (e)(1) and (2) of this section for pressure relief devices, such as relief valves or rupture disks, in organic HAP gas or vapor service instead of the pressure relief device requirements of § 63.1030 of subpart UU, § 63.165 of subpart H, or § 65.111 of this chapter. Except as specified in paragraphs (e)(4) and (5) of this section, you must also comply with the requirements specified in paragraphs (e)(3), (6), (7), and (8) of this section for

all pressure relief devices in organic HAP service.

(1) *Operating requirements.* Except during a pressure release, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as measured by the method in § 63.1023(b) of subpart UU, § 63.180(c) of subpart H, or § 65.104(b) of this chapter.

(2) *Pressure release requirements.* For pressure relief devices in organic HAP gas or vapor service, you must comply with the applicable requirements paragraphs (e)(2)(i) through (iii) of this section following a pressure release.

(i) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as specified in § 63.1023(b) of subpart UU, § 63.180(c) of subpart H, or § 65.104(b) of this chapter, no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.

(ii) If the pressure relief device includes a rupture disk, either comply with the requirements in paragraph (e)(2)(i) of this section (and do not replace the rupture disk) or install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release. You must conduct instrument monitoring, as specified in § 63.1023(b) of subpart UU, § 63.180(c) of subpart H, or § 65.104(b) of this chapter, no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.

(iii) If the pressure relief device consists only of a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release. You must not initiate startup of the equipment served by the rupture disk until the rupture disc is replaced. You must conduct instrument monitoring, as specified in § 63.1023(b) of subpart UU, § 63.180(c) of subpart H, or § 65.104(b) of this chapter, no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.

(3) *Pressure release management.* Except as specified in paragraphs (e)(4) and (5) of this section, you must comply with the requirements specified in

paragraphs (e)(3)(i) through (v) of this section for all pressure relief devices in organic HAP service.

(i) You must equip each affected pressure relief device with a device(s) or use a monitoring system that is capable of:

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

(ii) You must apply at least three redundant prevention measures to each affected pressure relief device and document these measures. Examples of prevention measures include:

- (A) Flow, temperature, liquid level and pressure indicators with deadman switches, monitors, or automatic actuators. Independent, non-duplicative systems within this category count as separate redundant prevention measures.

(B) Documented routine inspection and maintenance programs and/or operator training (maintenance programs and operator training may count as only one redundant prevention measure).

(C) Inherently safer designs or safety instrumentation systems.

(D) Deluge systems.

(E) Staged relief system where the initial pressure relief device (with lower set release pressure) discharges to a flare or other closed vent system and control device.

(iii) If any affected pressure relief device releases to atmosphere as a result of a pressure release event, you must perform root cause analysis and corrective action analysis according to the requirement in paragraph (e)(6) of this section and implement corrective actions according to the requirements in paragraph (e)(7) of this section. You must also calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in § 63.2520(e)(15). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

(iv) You must determine the total number of release events that occurred

during the calendar year for each affected pressure relief device separately. You must also determine the total number of release events for each pressure relief device for which the root cause analysis concluded that the root cause was a *force majeure* event, as defined in § 63.2550.

(v) Except for pressure relief devices described in paragraphs (e)(4) and (5) of this section, the following release events from an affected pressure relief device are a deviation of the pressure release management work practice standards.

(A) Any release event for which the root cause of the event was determined to be operator error or poor maintenance.

(B) A second release event not including *force majeure* events from a single pressure relief device in a 3 calendar year period for the same root cause for the same equipment.

(C) A third release event not including *force majeure* events from a single pressure relief device in a 3 calendar year period for any reason.

(4) *Pressure relief devices routed to a control device, process, fuel gas system, or drain system.* (i) If all releases and potential leaks from a pressure relief device are routed through a closed vent system to a control device, back into the process, to the fuel gas system, or to a drain system, then you are not required to comply with paragraph (e)(1), (2), or (3) of this section.

(ii) Before the compliance dates specified in § 63.2445(g), both the closed vent system and control device (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in § 63.982(b) and (c)(2) of subpart SS. Beginning no later than the compliance dates specified in § 63.2445(g), both the closed vent system and control device (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in §§ 63.982(c)(2), 63.983, and 63.2450(e)(4) through (6).

(iii) The drain system (if applicable) referenced in paragraph (e)(4)(i) must meet the applicable requirements specified in § 63.2485(e).

(5) *Pressure relief devices exempted from pressure release management requirements.* The following types of pressure relief devices are not subject to the pressure release management requirements in paragraph (e)(3) of this section.

(i) Pressure relief devices in heavy liquid service, as defined in § 63.1020 of subpart UU or § 65.103(f) of this chapter.

(ii) Thermal expansion relief valves.

(iii) Pressure relief devices on mobile equipment.

(iv) Pilot-operated pressure relief devices where the primary release valve is routed through a closed vent system to a control device or back into the process, to the fuel gas system, or to a drain system.

(v) Balanced bellows pressure relief devices where the primary release valve is routed through a closed vent system to a control device or back into the process, to the fuel gas system, or to a drain system.

(6) *Root cause analysis and corrective action analysis.* A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a release event. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (e)(6)(i) through (iii) of this section.

(i) You may conduct a single root cause analysis and corrective action analysis for a single emergency event that causes two or more pressure relief devices installed on the same equipment to release.

(ii) You may conduct a single root cause analysis and corrective action analysis for a single emergency event that causes two or more pressure relief devices to release, regardless of the equipment served, if the root cause is reasonably expected to be a *force majeure* event, as defined in § 63.2550.

(iii) Except as provided in paragraphs (e)(6)(i) and (ii) of this section, if more than one pressure relief device has a release during the same time period, an initial root cause analysis must be conducted separately for each pressure relief device that had a release. If the initial root cause analysis indicates that the release events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(7) *Corrective action implementation.* You must conduct a root cause analysis and corrective action analysis as specified in paragraphs (e)(3)(iii) and (e)(6) of this section, and you must implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (e)(7)(i) through (iii) of this section.

(i) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If you conclude that no corrective action should be implemented, you must

record and explain the basis for that conclusion no later than 45 days following the event.

(ii) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, you must develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(iii) No later than 45 days following the event for which a root cause and corrective action analyses were required, you must record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(8) *Flowing pilot-operated pressure relief devices.* For affected sources that commenced construction or reconstruction on or before December 17, 2019, you are prohibited from installing a flowing pilot-operated pressure relief device or replacing any pressure relief device with a flowing pilot-operated pressure relief device after August 12, 2023. For affected sources that commenced construction or reconstruction after December 17, 2019, you are prohibited from installing and operating flowing pilot-operated pressure relief devices. For purpose of compliance with this paragraph (e)(8), a flowing pilot-operated pressure relief device means the type of pilot-operated pressure relief device where the pilot discharge vent continuously releases emissions to the atmosphere when the pressure relief device is actuated.

(f) Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (f)(1) through (18) of this section do not apply when demonstrating compliance with this section.

(1) Section 63.163(c)(3) of subpart H.

(2) Section 63.172(j)(3) of subpart H.

(3) The second sentence of § 63.181(d)(5)(i) of subpart H.

(4) The phrase “may be included as part of the startup, shutdown, and malfunction plan, as required by the referencing subpart for the source, or” from § 63.1024(f)(4)(i) of subpart UU.

(5) Section 63.1026(b)(3) of subpart UU.

(6) The phrase “(except periods of startup, shutdown, or malfunction)” from § 63.1026(e)(1)(ii)(A) of subpart UU.

(7) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1028(e)(1)(i)(A) of subpart UU.

(8) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1031(b)(1) of subpart UU.

(9) The second sentence of § 65.105(f)(4)(i) of this chapter.

(10) Section 65.107(b)(3) of this chapter.

(11) The phrase “(except periods of start-up, shutdown, or malfunction)” from § 65.107(e)(1)(ii)(A) of this chapter.

(12) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.109(e)(1)(i)(A) of this chapter.

(13) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.112(b)(1) of this chapter.

(14) The last sentence of § 65.115(b)(1) of this chapter.

(15) The last sentence of § 65.115(b)(2) of this chapter.

(16) The phrase “Except for pressure relief devices needed for safety purposes, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 65.143(a)(3) of this chapter.

(17) For flares complying with § 63.2450(e)(5), the following provisions do not apply:

(i) Section 63.172(d) of subpart H;

(ii) Section 63.180(e) of subpart H;

(iii) Section 63.181(g)(1)(iii) of subpart H;

(iv) The phrase “including periods when a flare pilot light system does not have a flame” from § 63.181(g)(2)(i) of subpart H;

(v) Section 63.1034(b)(2)(iii) of subpart UU; and

(vi) Section 65.115(b)(2) of this chapter.

(18) For pressure relief devices complying with § 63.2480(e), the following provisions are modified as follows:

(i) In the introductory text of § 63.180(c), replace the reference to § 63.165(a) with § 63.2480(e)(1).

(ii) In § 63.181(b)(2)(i), replace the reference to § 63.165(c) with § 63.2480(e)(4).

(iii) In § 63.181(b)(2)(i), replace the reference to § 63.165(a) with § 63.2480(e)(1).

(iv) In § 63.181(b)(3)(ii), replace the reference to § 63.165(d) with § 63.2480(e)(2)(ii) and (iii).

(v) In § 63.181(f), replace the reference to § 63.165(a) and (b) with § 63.2480(e)(1) and (2).

(vi) The information required to be reported under § 63.182(d)(2)(xiv) is now required to be reported under § 63.2520(e)(15)(i) through (iii).

(vii) The reference to § 63.1030(b) in § 63.1021(a) no longer applies.

(viii) In § 63.1022(b)(2), replace the reference to § 63.1030(d) with § 63.2480(e)(4).

(ix) In § 63.1022(b)(3), replace the reference to § 63.1030(e) with § 63.2480(e)(2)(ii).

(x) The reference to § 63.1030(c) in § 63.1022(a)(1)(v) no longer applies. Instead comply with the § 63.2480(e)(1) and (2).

(xi) In § 63.1023(c) introductory text and (c)(4), replace the reference to § 63.1030(b) with § 63.2480(e)(1).

(xii) In § 63.1038(c) replace the reference to § 63.1030(c)(3) with § 63.2480(e)(2).

(xiii) The information required to be reported under § 63.1039(b)(4) is now required to be reported under § 63.2520(e)(15)(i) and (ii).

(xiv) The reference to § 65.111(b) of this chapter in § 65.102(a) of this chapter no longer applies.

(xv) In § 65.103(b)(3) of this chapter, replace the reference to § 65.111(d) with § 63.2480(e)(4).

(xvi) In § 65.103(b)(4) of this chapter, replace the reference to § 63.111(e) with § 63.2480(e)(2)(ii).

(xvii) The reference to § 65.111(b) and (c) of this chapter in § 65.104(a)(1)(iv) of this chapter no longer applies. Instead comply with § 63.2480(e)(1) and (2).

(xviii) In § 65.104(c) introductory text and (c)(4) of this chapter, replace the reference to § 63.111(b) with § 63.2480(e)(1).

(xix) In § 65.119(c)(5) of this chapter, replace the reference to § 65.111(c)(3) with § 63.2480(e)(2) and replace the reference to § 65.111(e) with § 63.2480(e)(2)(ii) and (iii).

(xx) The information required to be reported under § 65.120(b)(4) of this chapter is now required to be reported under § 63.2520(e)(15)(i) and (ii).

■ 12. Section 63.2485 is amended by:

- a. Revising paragraphs (a) and (f);
- b. Adding paragraph (h)(4);
- c. Revising paragraph (i)(2)(ii);
- d. Adding paragraph (i)(2)(iii);
- e. Revising paragraphs (k), the first sentence of (n)(2) introductory text, and (n)(2)(ii) and (n)(2)(iv)(A);
- f. Adding paragraph (n)(2)(vii);
- g. Revising paragraphs (n)(4) and (o); and
- h. Adding paragraphs (p) and (q).

The revisions and additions read as follows:

**§ 63.2485 What requirements must I meet for wastewater streams and liquid streams in open systems within an MCPU?**

(a) *General.* You must meet each requirement in Table 7 to this subpart that applies to your wastewater streams and liquid streams in open systems within an MCPU, except as specified in

paragraphs (b) through (q) of this section.

\* \* \* \* \*

(f) *Closed-vent system requirements.* Except as specified in § 63.2450(e)(6), when § 63.148(k) refers to closed vent systems that are subject to the requirements of § 63.172, the requirements of either § 63.172 or § 63.1034 apply for the purposes of this subpart.

\* \* \* \* \*

(h) \* \* \*

(4) As an alternative to using EPA Method 624 of 40 CFR part 136, appendix A, as specified in § 63.144(b)(5)(i)(C), you may use ASTM D5790–95 (Reapproved 2012) (incorporated by reference, see § 63.14) for the analysis of total organic HAP in wastewater samples. If you choose to use ASTM D5790–95 (Reapproved 2012), then you must also use the sampling procedures of EPA Method 25D 40 CFR part 60, appendix A–7, or an equivalent method.

(i) \* \* \*

(2) \* \* \*

(ii) The transferee must treat the wastewater stream or residual in a biological treatment unit in accordance with the requirement in paragraph (i)(2)(iii) of this section and the requirements of §§ 63.138 and 63.145 and the requirements referenced therein.

(iii) Beginning no later than the compliance dates specified in § 63.2445(g), the requirement of § 63.145(a)(3) no longer applies. Instead, the transferee must comply with the conditions specified in § 63.2450(g)(6).

\* \* \* \* \*

(k) *Outlet concentration correction for supplemental gases.* The requirement to correct outlet concentrations from combustion devices to 3-percent oxygen in §§ 63.139(c)(1)(ii) and 63.145(i)(6) applies only if supplemental gases are combined with a vent stream from a Group 1 wastewater stream. If emissions are controlled with a vapor recovery system as specified in § 63.139(c)(2), you must correct for supplemental gases as specified in § 63.2460(c)(6).

\* \* \* \* \*

(n) \* \* \*

(2) Calculate the destruction efficiency of the biological treatment unit using Equation 1 to this paragraph (n)(2) in accordance with the procedures described in paragraphs (n)(2)(i) through (viii) of this section. \* \* \*

\* \* \* \* \*

(ii) Except as specified in paragraph (n)(2)(vii) of this section, conduct the demonstration under representative process unit and treatment unit

operating conditions in accordance with § 63.145(a)(3) and (4).

\* \* \* \* \*

(iv) \* \* \*

(A) If the biological treatment process meets both of the requirements specified in § 63.145(h)(1)(i) and (ii), you may elect to replace the  $F_{bio}$  term in Equation 1 to paragraph (n)(2) of this section with the numeral “1.”

\* \* \* \* \*

(vii) Beginning no later than the compliance dates specified in § 63.2445(g), the requirement of § 63.145(a)(3) no longer applies. Instead, you must comply with the conditions specified in § 63.2450(g)(6).

\* \* \* \* \*

(4) For any wastewater streams that are Group 1 for both PSHAP and SHAP, you may elect to meet the requirements specified in Table 7 to this subpart for the PSHAP and then comply with paragraphs (n)(1) through (3) of this section for the SHAP in the wastewater system. You may determine the SHAP mass removal rate, in kg/hr, in treatment units that are used to meet the requirements for PSHAP and add this amount to both the numerator and denominator in Equation 1 to paragraph (n)(2) of this section.

(o) *Compliance records.* Except as specified in paragraph (p) of this section, for each CPMS used to monitor a nonflare control device for wastewater emissions, you must keep records as specified in § 63.998(c)(1) in addition to the records required in § 63.147(d).

(p) *Compliance records after date of compliance.* Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (o) of this section no longer applies. Instead, for each CPMS used to monitor a nonflare control device for wastewater emissions, you must keep records as specified in § 63.998(c)(1) in addition to the records required in § 63.147(d), except that the provisions of § 63.998(c)(1)(ii)(D), (E), (F), and (G) do not apply.

(q) *Startup, shutdown, and malfunction referenced provisions.* Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (q)(1) through (5) of this section do not apply when demonstrating compliance with this section.

(1) Section 63.105(d) of subpart F and the phrase “as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part” from § 63.105(e) of subpart F.

(2) Section 63.132(b)(3)(i)(B) of subpart G.

(3) The phrase “or startup/shutdown/malfunction” in § 63.132(f)(2) of subpart G.

(4) Section 63.148(f)(3) of subpart G.

(5) For flares complying with § 63.2450(e)(5), the following provisions do not apply:

(i) Section 63.139(c)(3) of subpart G;

(ii) Section 63.139(d)(3) of subpart G;

(iii) Section 63.145(j) of subpart G;

(iv) Section 63.146(b)(7)(i) of subpart G; and

(v) Section 63.147(d)(1) of subpart G.

■ 13. Section 63.2490 is revised to read as follows:

**§ 63.2490 What requirements must I meet for heat exchange systems?**

(a) You must comply with each requirement in Table 10 to this subpart that applies to your heat exchange systems, except as specified in paragraphs (b) through (d) of this section.

(b) Except as specified in paragraph (d) of this section, if you comply with the requirements of § 63.104 as specified in Table 10 to this subpart, then the phrase “a chemical manufacturing process unit meeting the conditions of § 63.100 (b)(1) through (b)(3) of this subpart” in § 63.104(a) means “an MCPU meeting the conditions of § 63.2435” for the purposes of this subpart.

(c) Except as specified in paragraph (d) of this section, if you comply with the requirements of § 63.104 as specified in Table 10 to this subpart, then the reference to “§ 63.100(c)” in § 63.104(a) does not apply for the purposes of this subpart.

(d) Unless one or more of the conditions specified in § 63.104(a)(1), (2), (5), and (6) are met, beginning no later than the compliance dates specified in § 63.2445(g), the requirements of § 63.104 as specified in Table 10 to this subpart and paragraphs (b) and (c) of this section no longer apply. Instead, you must monitor the cooling water for the presence of total strippable hydrocarbons that indicate a leak according to paragraph (d)(1) of this section, and if you detect a leak, then you must repair it according to paragraphs (d)(2) and (3) of this section, unless repair is delayed according to paragraph (d)(4) of this section. At any time before the compliance dates specified in § 63.2445(g), you may choose to comply with the requirements in this paragraph (d) in lieu of the requirements of § 63.104 as specified in Table 10 to this subpart and paragraphs (b) and (c) of this section. The requirements in this paragraph (d) do not apply to heat exchange systems that

have a maximum cooling water flow rate of 10 gallons per minute or less.

(1) You must perform monitoring to identify leaks of total strippable hydrocarbons from each heat exchange system subject to the requirements of this subpart according to the procedures in paragraphs (d)(1)(i) through (v) of this section.

(i) *Monitoring locations for closed-loop recirculation heat exchange systems.* For each closed loop recirculating heat exchange system, you must collect and analyze a sample from the location(s) described in either paragraph (d)(1)(i)(A) or (B) of this section.

(A) Each cooling tower return line or any representative riser within the cooling tower prior to exposure to air for each heat exchange system.

(B) Selected heat exchanger exit line(s), so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).

(ii) *Monitoring locations for once-through heat exchange systems.* For each once-through heat exchange system, you must collect and analyze a sample from the location(s) described in paragraph (d)(1)(ii)(A) of this section. You may also elect to collect and analyze an additional sample from the location(s) described in paragraph (d)(1)(ii)(B) of this section.

(A) Selected heat exchanger exit line(s), so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s). The selected monitoring location may be at a point where discharges from multiple heat exchange systems are combined provided that the combined cooling water flow rate at the monitoring location does not exceed 40,000 gallons per minute.

(B) The inlet water feed line for a once-through heat exchange system prior to any heat exchanger. If multiple heat exchange systems use the same water feed (*i.e.*, inlet water from the same primary water source), you may monitor at one representative location and use the monitoring results for that sampling location for all heat exchange systems that use that same water feed.

(iii) *Monitoring method.* If you comply with the total strippable hydrocarbon concentration leak action level as specified in paragraph (d)(1)(iv) of this section, you must comply with the requirements in paragraph (d)(1)(iii)(A) of this section. If you comply with the total hydrocarbon mass emissions rate leak action level as specified in paragraph (d)(1)(iv) of this section, you must comply with the

requirements in paragraphs (d)(1)(iii)(A) and (B) of this section.

(A) You must determine the total strippable hydrocarbon concentration (in parts per million by volume (ppmv) as methane) at each monitoring location using the “Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources” (incorporated by reference—see § 63.14) using a flame ionization detector (FID) analyzer for on-site determination as described in Section 6.1 of the Modified El Paso Method.

(B) You must convert the total strippable hydrocarbon concentration (in ppmv as methane) to a total hydrocarbon mass emissions rate (as methane) using the calculations in Section 7.0 of “Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources” (incorporated by reference—see § 63.14).

(iv) *Monitoring frequency and leak action level.* For each heat exchange system, you must initially monitor monthly for 6-months beginning upon startup and monitor quarterly thereafter using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or, for heat exchange systems with a recirculation rate of 10,000 gallons per minute or less, you may monitor quarterly using a leak action level defined as a total hydrocarbon mass emissions rate from the heat exchange system (as methane) of 0.18 kg/hr. If a leak is detected as specified in paragraph (d)(1)(v) of this section, then you must monitor monthly until the leak has been repaired according to the requirements in paragraph (d)(2) or (3) of this section. Once the leak has been repaired according to the requirements in paragraph (d)(2) or (3) of this section, quarterly monitoring for the heat exchange system may resume. The monitoring frequencies specified in this paragraph (d)(1)(iv) also apply to the inlet water feed line for a once-through heat exchange system, if monitoring of the inlet water feed is elected as provided in paragraph (d)(1)(ii)(B) of this section.

(v) *Leak definition.* A leak is defined as described in paragraph (d)(1)(v)(A) or (B) of this section, as applicable.

(A) For once-through heat exchange systems for which the inlet water feed is monitored as described in paragraph (d)(1)(ii)(B) of this section, a leak is detected if the difference in the measurement value of the sample taken from a location specified in paragraph

(d)(1)(ii)(A) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (d)(1)(ii)(B) of this section equals or exceeds the leak action level.

(B) For all other heat exchange systems, a leak is detected if a measurement value of the sample taken from a location specified in paragraph (d)(1)(i)(A) or (B) or (d)(1)(ii)(A) of this section equals or exceeds the leak action level.

(2) If a leak is detected using the methods described in paragraph (d)(1) of this section, you must repair the leak to reduce the concentration or mass emissions rate to below the applicable leak action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraph (d)(4) of this section. Repair must include re-monitoring at the monitoring location where the leak was identified according to the method specified in paragraph (d)(1)(iii) of this section to verify that the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is below the applicable leak action level. Repair may also include performing the additional monitoring in paragraph (d)(3) of this section to verify that the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is below the applicable leak action level. Actions that can be taken to achieve repair include but are not limited to:

(i) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;

(ii) Blocking the leaking tube within the heat exchanger;

(iii) Changing the pressure so that water flows into the process fluid;

(iv) Replacing the heat exchanger or heat exchanger bundle; or

(v) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.

(3) If you detect a leak when monitoring a cooling tower return line under paragraph (d)(1)(i)(A) of this section, you may conduct additional monitoring of each heat exchanger or group of heat exchangers associated with the heat exchange system for which the leak was detected, as provided in paragraph (d)(1)(i)(B) of this section. If no leaks are detected when monitoring according to the requirements of paragraph (d)(1)(i)(B) of this section, the heat exchange system is considered to have met the repair requirements through re-monitoring of the heat exchange system, as provided in paragraph (d)(2) of this section.

(4) You may delay repair when one of the conditions in paragraph (d)(4)(i) or (ii) of this section is met and the leak is less than the delay of repair action level specified in paragraph (d)(4)(iii) of this section. You must determine if a delay of repair is necessary as soon as practicable, but no later than 45 days after first identifying the leak.

(i) If the repair is technically infeasible without a shutdown and the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, then you may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monitoring, the delay of repair action level is exceeded, then you must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.

(ii) If the necessary equipment, parts, or personnel are not available and the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, then you may delay the repair for a maximum of 120 calendar days. You must demonstrate that the necessary equipment, parts, or personnel were not available. If, during subsequent monitoring, the delay of repair action level is exceeded, then you must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.

(iii) The delay of repair action level is a total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv or, for heat exchange systems with a recirculation rate of 10,000 gallons per minute or less, the delay of repair action level is a total hydrocarbon mass emissions rate (as methane) or 1.8 kg/hr. The delay of repair action level is assessed as described in paragraph (d)(4)(iii)(A) or (B) of this section, as applicable.

(A) For once-through heat exchange systems for which the inlet water feed is monitored as described in paragraph (d)(1)(ii)(B) of this section, the delay of repair action level is exceeded if the difference in the measurement value of the sample taken from a location specified in paragraph (d)(1)(ii)(A) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (d)(1)(ii)(B) of this section equals or exceeds the delay of repair action level.

(B) For all other heat exchange systems, the delay of repair action level is exceeded if a measurement value of the sample taken from a location specified in paragraph (d)(1)(i)(A) or (B) or (d)(1)(ii)(A) of this section equals or exceeds the delay of repair action level.

■ 14. Section 63.2492 is added to read as follows:

**§ 63.2492 How do I determine whether my process vent, storage tank, or equipment is in ethylene oxide service?**

To determine if process vents, storage tanks, and equipment leaks are in ethylene oxide service as defined in § 63.2550(i), you must comply with the requirements in paragraphs (a) through (c) of this section, as applicable.

(a) For each batch process vent or continuous process vent stream, you must measure the flow rate and concentration of ethylene oxide of each process vent as specified in paragraphs (a)(1) through (5) of this section.

(1) Measurements must be made prior to any dilution of the vent streams.

(2) Measurements may be made on the combined vent streams at an MCPU or for each separate vent stream.

(3) Method 1 or 1A of 40 CFR part 60, appendix A–1, as appropriate, must be used for the selection of the sampling sites. For vents smaller than 0.10 meter in diameter, sample at one point at the center of the duct.

(4) The gas volumetric flow rate must be determined using Method 2, 2A, 2C, 2D, 2F, or 2G of 40 CFR part 60, appendices A–1 and A–2, as appropriate.

(5) The concentration of ethylene oxide must be determined using Method 18 of 40 CFR part 60, appendix A–6, or Method 320 of appendix A to this part.

(b) For storage tanks, you must measure the concentration of ethylene oxide of the fluid stored in the storage tanks using Method 624.1 of 40 CFR part 136, appendix A, or preparation by Method 5031 and analysis by Method 8260D (both incorporated by reference, see § 63.14) in the SW–846 Compendium. In lieu of preparation by SW–846 Method 5031, you may use SW–846 Method 5030B (incorporated by reference, see § 63.14), as long as: You do not use a preservative in the collected sample; you store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and you analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected. If you are collecting a sample from a pressure vessel, you must maintain the sample under pressure both during and following sampling.

(c) For equipment leaks, you must comply with the requirements in paragraphs (c)(1) through (4) of this section.

(1) Each piece of equipment within an MCPU that can reasonably be expected to contain equipment in ethylene oxide service is presumed to be in ethylene oxide service unless you demonstrate that the piece of equipment is not in ethylene oxide service. For a piece of equipment to be considered not in ethylene oxide service, it must be determined that the percent ethylene oxide content of the process fluid that is contained in or contacts equipment can be reasonably expected to not exceed 0.1 percent by weight on an annual average basis. For purposes of determining the percent ethylene oxide content of the process fluid, you must use Method 18 of 40 CFR part 60, appendix A-6, for gaseous process fluid, and Method 624.1 of 40 CFR part 136, appendix A, or preparation by Method 5031 and analysis by Method 8260D (both incorporated by reference, see § 63.14) in the SW-846 Compendium for liquid process fluid. In lieu of preparation by SW-846 Method 5031, you may use SW-846 Method 5030B (incorporated by reference, see § 63.14), as long as: You do not use a preservative in the collected sample; you store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and you analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected.

(2) Unless specified by the Administrator, you may use good engineering judgment rather than the procedures specified in paragraph (c)(1) of this section to determine that the percent ethylene oxide content of the process fluid that is contained in or contacts equipment does not exceed 0.1 percent by weight.

(3) You may revise your determination for whether a piece of equipment is in ethylene oxide service by following the procedures in paragraph (c)(1) of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in ethylene oxide service.

(4) Samples used in determining the ethylene oxide content must be representative of the process fluid that is contained in or contacts the equipment.

■ 15. Section 63.2493 is added to read as follows:

**§ 63.2493 What requirements must I meet for process vents, storage tanks, or equipment that are in ethylene oxide service?**

This section applies beginning no later than the compliance dates specified in § 63.2445(i). In order to demonstrate compliance with the emission limits and work practice standards specified in Tables 1, 2, and 4 to this subpart for process vents and storage tanks in ethylene oxide service, you must meet the requirements specified in paragraphs (a) through (c) of this section. In order to demonstrate compliance with the requirements specified in Table 6 to this subpart for equipment in ethylene oxide service, you must meet the requirements specified in paragraphs (d) and (e) of this section.

(a) *Initial compliance.* For initial compliance, you must comply with paragraphs (a)(1) through (4) of this section, as applicable.

(1) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare as specified in Table 1, 2, or 4 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must conduct the initial visible emissions demonstration required by § 63.670(h) of subpart CC as specified in § 63.2450(e)(5).

(2) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight as specified in Table 1, 2, or 4 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must comply with paragraphs (a)(2)(i) through (viii) of this section.

(i) Conduct an initial performance test of the control device that is used to comply with the percent reduction requirement at the inlet and outlet of the control device. For purposes of compliance with this paragraph (a)(2), you may not use a design evaluation.

(ii) Conduct the performance test according to the procedures in §§ 63.997 and 63.2450(g). Use Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part to determine the ethylene oxide concentration. Use Method 1 or 1A of 40 CFR part 60, appendix A-1, to select the sampling sites at each sampling location. Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A-2. Use Method 4 of 40 CFR part 60, appendix A-3, to convert the volumetric flowrate to a dry basis.

(iii) Calculate the mass emission rate of ethylene oxide entering the control device and exiting the control device using Equations 1 and 2 to this paragraph (a)(2)(iii).

$$E_{\text{EtO, inlet}} = K C_{\text{EtO, inlet}} M_{\text{EtO}} Q_{\text{inlet}} \text{ (Eq. 1)}$$

$$E_{\text{EtO, outlet}} = K C_{\text{EtO, outlet}} M_{\text{EtO}} Q_{\text{outlet}} \text{ (Eq. 2)}$$

Where:

$E_{\text{EtO, inlet}}, E_{\text{EtO, outlet}}$  = Mass rate of ethylene oxide at the inlet and outlet of the control device, respectively, kilogram per hour.

$C_{\text{EtO, inlet}}, C_{\text{EtO, outlet}}$  = Concentration of ethylene oxide in the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

$M_{\text{EtO}}$  = Molecular weight of ethylene oxide, 44.05 grams per gram-mole.

$Q_{\text{inlet}}, Q_{\text{outlet}}$  = Flow rate of the gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

$K$  = Constant,  $2,494 \times 10^{-6}$  (parts per million)  $- 1$  (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

(iv) Calculate the percent reduction from the control device using Equation 3 to this paragraph (a)(2)(iv). You have demonstrated initial compliance if the overall reduction of ethylene oxide is greater than or equal to 99.9 percent by weight.

$$\text{Percent reduction} = (E_{\text{EtO, inlet}} - E_{\text{EtO, outlet}}) / E_{\text{EtO, inlet}} * 100 \text{ (Eq. 3)}$$

Where:

$E_{\text{EtO, inlet}}, E_{\text{EtO, outlet}}$  = Mass rate of ethylene oxide at the inlet and outlet of the control device, respectively, kilogram per hour, calculated using Equations 1 and 2 to paragraph (a)(2)(iii) of this section.

(v) If a new control device is installed, then conduct a performance test of the new device following the procedures in paragraphs (a)(2)(i) through (iv) of this section.

(vi) If you vent emissions through a closed-vent system to a scrubber, then you must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vi)(A) through (C) of this section during the performance test.

(A) Scrubber liquid-to-gas ratio (L/G), determined from the total scrubber liquid inlet flow rate and the exit gas flow rate. Determine the average L/G during the performance test as the average of the test run averages.

(B) Scrubber liquid pH of the liquid in the reactant tank. The pH may be measured at any point between the discharge from the scrubber column and the inlet to the reactant tank. Determine the average pH during the performance test as the average of the test run averages.

(C) Temperature of the water entering the scrubber column. The temperature may be measured at any point after the heat exchanger and prior to entering the top of the scrubber column. Determine the average inlet water temperature as the average of the test run averages.

(vii) If you vent emissions through a closed-vent system to a thermal oxidizer, then you must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vii)(A) and (B) of this section during the performance test.

(A) Combustion chamber temperature. Determine the average combustion chamber temperature during the performance test as the average of the test run averages.

(B) Flue gas flow rate. Determine the average flue gas flow rate during the performance test as the average of the test run averages.

(viii) If you vent emissions through a closed-vent system to a control device other than a flare, scrubber, or thermal oxidizer, then you must notify the Administrator of the operating parameters that you plan to monitor during the performance test prior to establishing operating parameter limits for the control device.

(3) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide to less than 1 ppmv as specified in Table 1, 2, or 4 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must comply with either paragraph (a)(3)(i) or (ii) of this section.

(i) Install an FTIR CEMS meeting the requirements of Performance Specification 15 of 40 CFR part 60, appendix B, to continuously monitor the ethylene oxide concentration at the exit of the control device. Comply with the requirements specified in § 63.2450(j) for your CEMS.

(ii) If you do not install a CEMS under paragraph (a)(3)(i) of this section, you must comply with paragraphs (a)(3)(ii)(A) through (C) of this section.

(A) Conduct an initial performance test of the control device that is used to comply with the concentration requirement at the outlet of the control device.

(B) Conduct the performance test according to the procedures in §§ 63.997 and 63.2450(g). Use Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part to determine the ethylene oxide concentration. You have demonstrated

initial compliance if the ethylene oxide concentration is less than 1 ppmv.

(C) Comply with the requirements specified in paragraphs (a)(2)(v) through (viii) of this section, as applicable.

(4) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide to less than 5 pounds per year for all combined process vents as specified in Table 1 or 2 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must comply with paragraphs (a)(4)(i) through (iv) of this section.

(i) Conduct an initial performance test of the control device that is used to comply with the mass emission limit requirement at the outlet of the control device.

(ii) Conduct the performance test according to the procedures in §§ 63.997 and 63.2450(g). Use Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part to determine the ethylene oxide concentration. Use Method 1 or 1A of 40 CFR part 60, appendix A-1, to select the sampling site. Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A-2. Use Method 4 of 40 CFR part 60, appendix A-3, to convert the volumetric flowrate to a dry basis.

(iii) Calculate the mass emission rate of ethylene oxide exiting the control device using Equation 2 to paragraph (a)(2)(iii) of this section. You have demonstrated initial compliance if the ethylene oxide from all process vents (controlled and uncontrolled) is less than 5 pounds per year when combined.

(iv) Comply with the requirements specified in paragraphs (a)(2)(v) through (viii) of this section, as applicable.

(b) *Continuous compliance.* For continuous compliance, you must comply with paragraphs (b)(1) through (6) of this section, as applicable.

(1) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare as specified in Table 1, 2, or 4 to this subpart, then you must comply with the requirements in §§ 63.983 and 63.2450(e)(4) through (6).

(2) Continuously monitor the ethylene oxide concentration at the exit of the control device using an FTIR CEMS meeting the requirements of Performance Specification 15 of 40 CFR part 60, appendix B, and § 63.2450(j). If you use an FTIR CEMS, you do not need to conduct the performance testing required in paragraph (b)(3) of this section or the operating parameter

monitoring required in paragraphs (b)(4) through (6) of this section.

(3) Conduct a performance test no later than 60 months after the previous performance test and reestablish operating parameter limits following the procedures in paragraph (a)(2) through (4) of this section. The Administrator may request a repeat performance test at any time. For purposes of compliance with this paragraph (b)(3), you may not use a design evaluation.

(4) If you vent emissions through a closed-vent system to a scrubber, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must meet the operating parameter limits specified in paragraphs (b)(4)(i) through (v) of this section.

(i) Minimum scrubber liquid-to-gas ratio (L/G), equal to the average L/G measured during the most recent performance test. Determine total scrubber liquid inlet flow rate with a flow sensor with a minimum accuracy of at least  $\pm 5$  percent over the normal range of flow measured, or 1.9 liters per minute (0.5 gallons per minute), whichever is greater. Determine exit gas flow rate with a flow sensor with a minimum accuracy of at least  $\pm 5$  percent over the normal range of flow measured, or 280 liters per minute (10 cubic feet per minute), whichever is greater. Compliance with the minimum L/G operating limit must be determined continuously on a 1-hour block basis.

(ii) Maximum scrubber liquid pH of the liquid in the reactant tank, equal to the average pH measured during the most recent performance test. Compliance with the pH operating limit must be determined continuously on a 1-hour block basis. Use a pH sensor with a minimum accuracy of  $\pm 0.2$  pH units.

(iii) Pressure drop across the scrubber column, within the pressure drop range specified by the manufacturer or established based on engineering analysis. Compliance with the pressure drop operating limit must be determined continuously on a 1-hour block basis. Use pressure sensors with a minimum accuracy of  $\pm 5$  percent over the normal operating range or 0.12 kilopascals, whichever is greater.

(iv) Maximum temperature of the water entering the scrubber column, equal to the average temperature measured during the most recent performance test. Compliance with the inlet water temperature operating limit must be determined continuously on a 1-hour block basis. Use a temperature sensor with a minimum accuracy of  $\pm 1$  percent over the normal range of the temperature measured, expressed in

degrees Celsius, or 2.8 degrees Celsius, whichever is greater.

(v) Liquid feed pressure to the scrubber column within the feed pressure range specified by the manufacturer or established based on engineering analysis. Compliance with the liquid feed pressure operating limit must be determined continuously on a 1-hour block basis. Use a pressure sensor with a minimum accuracy of  $\pm 5$  percent over the normal operating range or 0.12 kilopascals, whichever is greater.

(5) If you vent emissions through a closed-vent system to a thermal oxidizer, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must meet the operating parameter limits specified in paragraphs (b)(5)(i) and (ii) of this section and the requirements in paragraph (b)(5)(iii) of this section.

(i) Minimum combustion chamber temperature, equal to the average combustion chamber temperature measured during the most recent performance test. Determine combustion chamber temperature with a temperature sensor with a minimum accuracy of at least  $\pm 1$  percent over the normal range of temperature measured, expressed in degrees Celsius, or 2.8 degrees Celsius, whichever is greater. Compliance with the minimum combustion chamber temperature operating limit must be determined continuously on a 1-hour block basis.

(ii) Maximum flue gas flow rate, equal to the average flue gas flow rate measured during the most recent performance test. Determine flue gas flow rate with a flow sensor with a minimum accuracy of at least  $\pm 5$  percent over the normal range of flow measured, or 280 liters per minute (10 cubic feet per minute), whichever is greater. Compliance with the maximum flue gas flow rate operating limit must be determined continuously on a 1-hour block basis.

(iii) You must maintain the thermal oxidizer in accordance with good combustion practices that ensure proper combustion. Good combustion practices include, but are not limited to, proper burner maintenance, proper burner alignment, proper fuel to air distribution and mixing, routine inspection, and preventative maintenance.

(6) If you vent emissions through a closed-vent system to a control device other than a flare, scrubber, or thermal oxidizer, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must monitor the operating parameters identified in paragraph (a)(2)(viii) of this section and meet the established operating parameter limits to ensure

continuous compliance. The frequency of monitoring and averaging time will be determined based upon the information provided to the Administrator.

(c) *Pressure vessels.* If you have a storage tank in ethylene oxide service that is considered a pressure vessel as defined in as defined in § 63.2550(i), then you must operate and maintain the pressure vessel, as specified in paragraphs (c)(1) through (5) of this section.

(1) The pressure vessel must be designed to operate with no detectable emissions at all times.

(2) Monitor each point on the pressure vessel through which ethylene oxide could potentially be emitted by conducting initial and annual performance tests using Method 21 of 40 CFR part 60, appendix A-7.

(3) Each instrument reading greater than 500 ppmv is a deviation.

(4) Estimate the flow rate and total regulated material emissions from the defect. Assume the pressure vessel has been emitting for half of the time since the last performance test, unless other information supports a different assumption.

(5) Whenever ethylene oxide is in the pressure vessel, you must operate the pressure vessel as a closed system that vents through a closed vent system to a control device as specified in paragraphs (c)(5)(i) through (iii) of this section, as applicable.

(i) For closed vent systems, comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983.

(ii) For a non-flare control device, comply with requirements as specified in paragraph (b) of this section.

(iii) For a flare, comply with the requirements of § 63.2450(e)(5).

(d) *Equipment in ethylene oxide service.* Except as specified in paragraphs (d)(1) through (4) and (e) of this section, for equipment in ethylene oxide service as defined in § 63.2550(i), you must comply with the requirements of subpart UU or H of this part, or 40 CFR part 65, subpart F.

(1) For pumps in ethylene oxide service, you must comply with the requirements in paragraphs (d)(1)(i) through (iii) of this section.

(i) The instrument reading that defines a leak for pumps is 1,000 parts per million or greater.

(ii) The monitoring period for pumps is monthly.

(iii) When a leak is detected, it must be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

(2) For connectors in ethylene oxide service, you must comply with the

requirements in paragraphs (d)(2)(i) through (iii) of this section.

(i) The instrument reading that defines a leak for connectors is 500 parts per million or greater.

(ii) The monitoring period for connectors is once every 12 months.

(iii) When a leak is detected, it must be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

(3) For each light liquid pump or connector in ethylene oxide service that is added to an affected source, and for each light liquid pump or connector in ethylene oxide service that replaces a light liquid pump or connector in ethylene oxide service, you must initially monitor for leaks within 5 days after initial startup of the equipment.

(4) Pressure relief devices in ethylene oxide service must comply with the requirements in § 63.2480(e) and (f), except as specified in paragraphs (d)(4)(i) through (v) of this section.

(i) The second sentence in § 63.2480(e)(3)(iv) does not apply.

(ii) Section 63.2480(e)(3)(v) does not apply.

(iii) Section 63.2480(e)(6)(ii) does not apply.

(iv) Any release event from an affected pressure relief device is a deviation of the pressure release management work practice standards.

(v) Replace all references to § 63.2445(g) with § 63.2445(h).

(e) *Non-applicable referenced provisions.* The referenced provisions specified in paragraphs (e)(1) through (15) of this section do not apply when demonstrating compliance with this section.

(1) Section 63.163(c)(3) of subpart H.

(2) Section 63.163(e) of subpart H.

(3) The second sentence of § 63.181(d)(5)(i) of subpart H.

(4) Section 63.1026(b)(3) of subpart UU.

(5) Section 63.1026(e) of subpart UU.

(6) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1028(e)(1)(i)(A) of subpart UU.

(7) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1031(b)(1) of subpart UU.

(8) The second sentence of § 65.105(f)(4)(i) of this chapter.

(9) Section 65.107(b)(3) of this chapter.

(10) Section 65.107(e) of this chapter.

(11) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.109(e)(1)(i)(A) of this chapter.

(12) The phrase “(except during periods of start-up, shutdown, or

malfunction)” from § 65.112(b)(1) of this chapter.

(13) The last sentence of § 65.115(b)(1) of this chapter.

(14) The last sentence of § 65.115(b)(2) of this chapter.

(15) For flares complying with § 63.2450(e)(5), the following provisions do not apply:

- (i) Section 63.172(d) of subpart H;
- (ii) Section 63.180(e) of subpart H;
- (iii) Section 63.181(g)(1)(iii) of subpart H;

(iv) The phrase “including periods when a flare pilot light system does not have a flame” from § 63.181(g)(2)(i) of subpart H;

(v) Section 63.1034(b)(2)(iii) of subpart H; and

(vi) Section 65.115(b)(2) of this chapter.

(16) Requirements for maintenance vents in § 63.2450(v).

■ 16. Section 63.2495 is amended by revising paragraph (b)(1) to read as follows:

**§ 63.2495 How do I comply with the pollution prevention standard?**

\* \* \* \* \*

(b) \* \* \*

(1) You must comply with the emission limitations and work practice standards contained in Tables 1 through 7 to this subpart for all HAP that are generated in the MCPU and that are not included in consumption, as defined in § 63.2550. If any vent stream routed to the combustion control is a halogenated vent stream, as defined in § 63.2550, then hydrogen halides that are generated as a result of combustion control must be controlled according to the requirements in § 63.2450(e)(4) and the requirements of § 63.994 and the requirements referenced therein.

\* \* \* \* \*

■ 17. Section 63.2500 is amended by revising paragraph (a) and adding paragraph (g) to read as follows:

**§ 63.2500 How do I comply with emissions averaging?**

(a) For an existing source, you may elect to comply with the percent reduction emission limitations in Tables 1, 2, 4, 5, and 7 to this subpart by complying with the emissions averaging provisions specified in § 63.150, except as specified in paragraphs (b) through (g) of this section.

\* \* \* \* \*

(g) Beginning no later than the compliance dates specified in § 63.2445(g), § 63.150(f)(2) does not apply when demonstrating compliance with this section.

■ 18. Section 63.2505 is amended by revising paragraphs (b)(1) and (b)(6)(i) and (ii) to read as follows:

**§ 63.2505 How do I comply with the alternative standard?**

\* \* \* \* \*

(b) \* \* \*

(1) You must comply with the requirements in § 63.2450(e)(4) and (6), and the requirements in § 63.983 and the requirements referenced therein for closed-vent systems, except if you are not reducing organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices, including a flare or recovery device, you are not required to comply with the requirements in § 63.983(b)(1)(i)(A), (b)(1)(ii), (c), (d)(1)(ii), and (d)(2) and (3).

\* \* \* \* \*

(6) \* \* \*

(i) Demonstrate initial compliance with the 95-percent reduction by conducting a performance test and setting a site-specific operating limit(s) for the scrubber in accordance with the requirements in § 63.2450(e)(4) and the requirements of § 63.994 and the requirements referenced therein. You must submit the results of the initial compliance demonstration in the notification of compliance status report. If the performance test report is submitted electronically through the EPA’s CEDRI in accordance with § 63.2520(f), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.

(ii) Install, operate, and maintain CPMS for the scrubber as specified in §§ 63.994(c) and 63.2450(k), instead of as specified in § 63.1258(b)(5)(i)(C). You must also comply with the requirements in § 63.2450(e)(4), as applicable.

\* \* \* \* \*

■ 19. Section 63.2515 is amended by revising paragraph (a) and adding paragraph (d) to read as follows:

**§ 63.2515 What notifications must I submit and when?**

(a) *General.* Except as specified in paragraph (d) of this section, you must submit all of the notifications in §§ 63.6(h)(4) and (5), 63.7(b) and (c), 63.8(e) and (f)(4) and (6), and 63.9(b) through (h) of subpart A that apply to you by the dates specified.

\* \* \* \* \*

(d) *Supplement to Notification of Compliance Status.* You must also submit supplements to the Notification of Compliance Status as specified in § 63.2520(d)(3) through (5).

■ 20. Section 63.2520 is amended by:

- a. Revising paragraphs (c) introductory text and (c)(2);
- b. Adding paragraph (c)(8);
- c. Revising paragraphs (d) introductory text and (d)(2)(ii);
- d. Adding paragraphs (d)(3) through (5);
- e. Revising paragraphs (e) introductory text, (e)(2) through (4), (e)(5)(ii) introductory text, and (e)(5)(ii)(A) and (B);
- f. Adding paragraph (e)(5)(ii)(D);
- g. Revising paragraphs (e)(5)(iii) introductory text and (e)(5)(iii)(A) through (F) and (I);
- h. Adding paragraphs (e)(5)(iii)(M) and (N);
- i. Revising paragraphs (e)(7), (8), and (9);
- j. Revising paragraphs (e)(10) introductory text and (e)(10)(i); and
- k. Adding paragraphs (e)(11) through (17) and (f) through (i).

The revisions and additions read as follows:

**§ 63.2520 What reports must I submit and when?**

\* \* \* \* \*

(c) *Precompliance report.* You must submit a precompliance report to request approval for any of the items in paragraphs (c)(1) through (8) of this section. We will either approve or disapprove the report within 90 days after we receive it. If we disapprove the report, you must still be in compliance with the emission limitations and work practice standards in this subpart by the compliance date. To change any of the information submitted in the report, you must notify us 60 days before the planned change is to be implemented.

\* \* \* \* \*

(2) Descriptions of daily or per batch demonstrations to verify that control devices subject to § 63.2450(k)(6) are operating as designed.

\* \* \* \* \*

(8) For halogen reduction device other than a scrubber, procedures for establishing monitoring parameters as required by § 63.2450(e)(3)(ii).

(d) *Notification of compliance status report.* You must submit a notification of compliance status report according to the schedule in paragraph (d)(1) of this section, and the notification of compliance status report must contain the information specified in paragraphs (d)(2) through (5) of this section.

\* \* \* \* \*

(2) \* \* \*

(ii) The results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to §§ 63.2455 through 63.2485. For performance tests, results must include descriptions of sampling and analysis procedures and quality assurance procedures. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with paragraph (f) of this section, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.

\* \* \* \* \*

(3) For flares subject to the requirements of § 63.2450(e)(5), you must also submit the information in this paragraph (d)(3) in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for flare monitoring. In lieu of the information required in § 63.987(b) of subpart SS, the supplement to the Notification of Compliance Status must include flare design (e.g., steam-assisted, air-assisted, non-assisted, or pressure-assisted multi-point); all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the initial visible emissions demonstration required by § 63.670(h) of subpart CC, as applicable; and all periods during the compliance determination when the pilot flame or flare flame is absent.

(4) For pressure relief devices subject to the pressure release management work practice standards in § 63.2480(e)(3), you must also submit the information listed in paragraphs (d)(4)(i) and (ii) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring.

(i) A description of the monitoring system to be implemented, including the relief devices and process parameters to be monitored, and a description of the alarms or other methods by which operators will be notified of a pressure release.

(ii) A description of the prevention measures to be implemented for each affected pressure relief device.

(5) For process vents, storage tanks, and equipment leaks subject to the requirements of § 63.2493, you must also submit the information in this paragraph (d)(5) in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date. The supplement to the Notification of Compliance Status must identify all process vents, storage tanks, and equipment that are in ethylene oxide service as defined in § 63.2550, the method(s) used to control ethylene oxide emissions from each process vent and storage tank (i.e., use of a flare, scrubber, or other control device), the method(s) used to control ethylene oxide emissions from equipment (i.e., subpart UU or H of this part, or 40 CFR part 65, subpart F), and the information specified in paragraphs (d)(5)(i) through (iii) of this section.

(i) For process vents, include all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations you used to determine the total uncontrolled ethylene oxide mass emission rate for the sum of all vent gas streams.

(ii) For storage tanks, include the concentration of ethylene oxide of the fluid stored in each storage tank.

(iii) For equipment, include the percent ethylene oxide content of the process fluid and the method used to determine it.

(e) *Compliance report.* The compliance report must contain the information specified in paragraphs (e)(1) through (17) of this section. On and after August 12, 2023 or once the reporting template for this subpart has been available on the CEDRI website for 1 year, whichever date is later, you must submit all subsequent reports to the EPA via the CEDRI, which can be accessed through the EPA's CDX (<https://cdx.epa.gov/>). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot later be claimed to be CBI. You must use the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/compliance-and-emissions-data-reporting-interface-cedri>) for this subpart. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports under §§ 63.9(i) and 63.10(a) of subpart A, the report must be submitted by the deadline specified in this

subpart, regardless of the method in which the report is submitted. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim, submit a complete report, including information claimed to be CBI, to the EPA. The report must be generated using the appropriate form on the CEDRI website or an alternate electronic file consistent with the extensible markup language (XML) schema listed on the CEDRI website. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, CORE CBI Office, U.S. EPA Mailroom (C404-02), Attention: Miscellaneous Organic Chemical Manufacturing Sector Lead, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described in this paragraph (e). All CBI claims must be asserted at the time of submission. Furthermore under CAA section 114(c) emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available. You may assert a claim of EPA system outage or *force majeure* for failure to timely comply with the reporting requirement in this paragraph (e) provided you meet the requirements outlined in paragraph (i) or (j) of this section, as applicable.

\* \* \* \* \*

(2) Statement by a responsible official with that official's name, title, and signature, certifying the accuracy of the content of the report. If your report is submitted via CEDRI, the certifier's electronic signature during the submission process replaces the requirement in this paragraph (e)(2).

(3) Date of report and beginning and ending dates of the reporting period. You are no longer required to provide the date of report when the report is submitted via CEDRI.

(4) For each SSM during which excess emissions occur, the compliance report must include records that the procedures specified in your startup, shutdown, and malfunction plan (SSMP) were followed or documentation of actions taken that are not consistent with the SSMP, and include a brief description of each malfunction. On and after August 12, 2023, this paragraph (e)(4) no longer

applies; however, for historical compliance purposes, a copy of the plan must be retained and available on-site for five years after August 12, 2023.

(5) \* \* \*

(ii) For each deviation from an emission limit, operating limit, and work practice standard that occurs at an affected source where you are not using a continuous monitoring system (CMS) to comply with the emission limit or work practice standard in this subpart, you must include the information in paragraphs (e)(5)(ii)(A) through (D) of this section. This includes periods of SSM.

(A) The total operating time in hours of the affected source during the reporting period.

(B) Except as specified in paragraph (e)(5)(ii)(D) of this section, information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

\* \* \* \* \*

(D) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (e)(5)(ii)(B) of this section no longer applies. Instead, report information for each deviation to meet an applicable standard. For each instance, report the start date, start time, and duration in hours of each deviation. For each deviation, the report must include a list of the affected sources or equipment, an estimate of the quantity in pounds of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, the cause of the deviation (including unknown cause, if applicable), as applicable, and the corrective action taken.

(iii) For each deviation from an emission limit or operating limit occurring at an affected source where you are using a CMS to comply with an emission limit in this subpart, you must include the information in paragraphs (e)(5)(iii)(A) through (N) of this section. This includes periods of SSM.

(A) The start date, start time, and duration in hours that each CMS was inoperative, except for zero (low-level) and high-level checks.

(B) The start date, start time, and duration in hours that each CEMS was out-of-control and a description of the corrective actions taken.

(C) Except as specified in paragraph (e)(5)(iii)(M) of this section, the date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(D) The total duration in hours of all deviations for each CMS during the

reporting period, the total operating time in hours of the affected source during the reporting period, and the total duration as a percent of the total operating time of the affected source during that reporting period.

(E) Except as specified in paragraph (e)(5)(iii)(N) of this section, a breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(F) The total duration in hours of CMS downtime for each CMS during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the affected source during that reporting period.

\* \* \* \* \*

(I) The monitoring equipment manufacturer(s) and model number(s) and the pollutant or parameter monitored.

\* \* \* \* \*

(M) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (e)(5)(iii)(C) of this section no longer applies. Instead, report the number of deviation to meet an applicable standard. For each instance, report the start date, start time and duration in hours of each deviation. For each deviation, the report must include a list of the affected sources or equipment, an estimate of the quantity in pounds of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, and the cause of the deviation (including unknown cause, if applicable), as applicable, and the corrective action taken.

(N) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (e)(5)(iii)(E) of this section no longer applies. Instead, report a breakdown of the total duration in hours of the deviations during the reporting period into those that are due control equipment problems, process problems, other known causes, and other unknown causes.

\* \* \* \* \*

(7) Include each new operating scenario which has been operated since the time period covered by the last compliance report and has not been submitted in the notification of compliance status report or a previous compliance report. For each new operating scenario, you must report the information specified in § 63.2525(b) and provide verification that the operating conditions for any associated control or treatment device have not been exceeded and that any required

calculations and engineering analyses have been performed. For the purposes of this paragraph (e)(7), a revised operating scenario for an existing process is considered to be a new operating scenario.

(8) For process units added to a PUG, you must report the description and rationale specified in § 63.2525(i)(4). You must report your primary product redeterminations specified in § 63.2525(i)(5).

(9) Except as specified in §§ 63.2450(e)(4), 63.2480(f), and 63.2485(p) and (q) and paragraph (t) of this section, applicable records and information for periodic reports as specified in referenced subparts F, G, H, SS, UU, WW, and GGG of this part and subpart F of 40 CFR part 65.

(10) Except as specified in paragraph (e)(10)(ii) of this section, whenever you make a process change, or change any of the information submitted in the notification of compliance status report or a previous compliance report, that is not within the scope of an existing operating scenario, you must document the change in your compliance report. A process change does not include moving within a range of conditions identified in the standard batch, and a nonstandard batch does not constitute a process change.

(i) The notification must include all of the information in paragraphs (e)(10)(i)(A) through (C) of this section.

(A) A description of the process change.

(B) Revisions to any of the information reported in the original notification of compliance status report under paragraph (d) of this section.

(C) Information required by the notification of compliance status report under paragraph (d) of this section for changes involving the addition of processes or equipment at the affected source.

(ii) You must submit a report 60 days before the scheduled implementation date of any of the changes identified in paragraph (e)(10)(ii)(A), (B), or (C) of this section.

(A) Any change to the information contained in the precompliance report.

(B) A change in the status of a control device from small to large.

(C) A change from Group 2 to Group 1 for any emission point except for batch process vents that meet the conditions specified in § 63.2460(b)(6)(i).

(11) For each flare subject to the requirements in § 63.2450(e)(5), the compliance report must include the items specified in paragraphs (e)(11)(i) through (vi) of this section in lieu of the

information required in § 63.999(c)(3) of subpart SS.

(i) Records as specified in § 63.2525(m)(1) for each 15-minute block during which there was at least one minute when regulated material is routed to a flare and no pilot flame or flare flame is present. Include the start and stop time and date of each 15-minute block.

(ii) Visible emission records as specified in § 63.2525(m)(2)(iv) for each period of 2 consecutive hours during which visible emissions exceeded a total of 5 minutes.

(iii) The periods specified in § 63.2525(m)(6). Indicate the date and start and end times for each period, and the net heating value operating parameter(s) determined following the methods in § 63.670(k) through (n) of subpart CC as applicable.

(iv) For flaring events meeting the criteria in §§ 63.670(o)(3) of subpart CC and 63.2450(e)(5)(v):

(A) The start and stop time and date of the flaring event.

(B) The length of time in minutes for which emissions were visible from the flare during the event.

(C) For steam-assisted, air-assisted, and non-assisted flares, the start date, start time, and duration in minutes for periods of time that the flare tip velocity exceeds the maximum flare tip velocity determined using the methods in § 63.670(d)(2) of subpart CC and the maximum 15-minute block average flare tip velocity in ft/sec recorded during the event.

(D) Results of the root cause and corrective actions analysis completed during the reporting period, including the corrective actions implemented during the reporting period and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.

(v) For pressure-assisted multi-point flares, the periods of time when the pressure monitor(s) on the main flare header show the burners operating outside the range of the manufacturer's specifications. Indicate the date and start and end times for each period.

(vi) For pressure-assisted multi-point flares, the periods of time when the staging valve position indicator monitoring system indicates a stage should not be in operation and is or when a stage should be in operation and is not. Indicate the date and start and end times for each period.

(12) For bypass lines subject to the requirements § 63.2450(e)(6), the compliance report must include the start date, start time, duration in hours, estimate of the volume of gas in

standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.

(13) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.2450(e)(7), you must report the date of each instance when breakthrough, as defined in § 63.2550(i), is detected between the first and second adsorber and the adsorber is not replaced according to § 63.2450(e)(7)(iii)(A).

(14) For any maintenance vent release exceeding the applicable limits in § 63.2450(v)(1), the compliance report must include the information specified in paragraphs (e)(14)(i) through (iv) of this section. For the purposes of this reporting requirement, if you comply with § 63.2450(v)(1)(iv) then you must report each venting event conducted under those provisions and include an explanation for each event as to why utilization of this alternative was required.

(i) Identification of the maintenance vent and the equipment served by the maintenance vent.

(ii) The date and time the maintenance vent was opened to the atmosphere.

(iii) The lower explosive limit in percent, vessel pressure in psig, or mass in pounds of VOC in the equipment, as applicable, at the start of atmospheric venting. If the 5 psig vessel pressure option in § 63.2450(v)(1)(ii) was used and active purging was initiated while the lower explosive limit was 10 percent or greater, also include the lower explosive limit of the vapors at the time active purging was initiated.

(iv) An estimate of the mass in pounds of organic HAP released during the entire atmospheric venting event.

(15) Compliance reports for pressure relief devices subject to the requirements § 63.2480(e) must include the information specified in paragraphs (e)(15)(i) through (iii) of this section.

(i) For pressure relief devices in organic HAP gas or vapor service, pursuant to § 63.2480(e)(1), report the instrument readings and dates for all readings of 500 ppmv or greater.

(ii) For pressure relief devices in organic HAP gas or vapor service subject to § 63.2480(e)(2), report the instrument readings and dates of instrument monitoring conducted.

(iii) For pressure relief devices in organic HAP service subject to § 63.2480(e)(3), report each pressure

release to the atmosphere, including the start date, start time, and duration in minutes of the pressure release and an estimate of the mass quantity in pounds of each organic HAP released; the results of any root cause analysis and corrective action analysis completed during the reporting period, including the corrective actions implemented during the reporting period; and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.

(16) For each heat exchange system subject to § 63.2490(d), beginning no later than the compliance dates specified in § 63.2445(g), the reporting requirements of § 63.104(f)(2) no longer apply; instead, the compliance report must include the information specified in paragraphs (e)(16)(i) through (v) of this section.

(i) The number of heat exchange systems at the plant site subject to the monitoring requirements in § 63.2490(d) during the reporting period;

(ii) The number of heat exchange systems subject to the monitoring requirements in § 63.2490(d) at the plant site found to be leaking during the reporting period;

(iii) For each monitoring location where the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate was determined to be equal to or greater than the applicable leak definitions specified in § 63.2490(d)(1)(v) during the reporting period, identification of the monitoring location (e.g., unique monitoring location or heat exchange system ID number), the measured total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate, the date the leak was first identified, and, if applicable, the date the source of the leak was identified;

(iv) For leaks that were repaired during the reporting period (including delayed repairs), identification of the monitoring location associated with the repaired leak, the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate measured during re-monitoring to verify repair, and the re-monitoring date (i.e., the effective date of repair); and

(v) For each delayed repair, identification of the monitoring location associated with the leak for which repair is delayed, the date when the delay of repair began, the date the repair is expected to be completed (if the leak is not repaired during the reporting period), the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate and date of each monitoring event conducted on the

delayed repair during the reporting period, and an estimate in pounds of the potential total hydrocarbon emissions over the reporting period associated with the delayed repair.

(17) For process vents and storage tanks in ethylene oxide service subject to the requirements of § 63.2493, the compliance report must include:

(i) The periods specified in § 63.2525(s)(4). Indicate the date and start and end times for each period.

(ii) If you obtain an instrument reading greater than 500 ppmv of a leak when monitoring a pressure vessel in accordance with § 63.2493(c)(2), submit a copy of the records specified in § 63.2525(s)(5)(ii).

(iii) Reports for equipment subject to the requirements of § 63.2493 as specified in paragraph (e)(9) of this section.

(f) *Performance test reports.* Beginning no later than October 13, 2020, you must submit performance test reports in accordance with this paragraph (f). Unless otherwise specified in this subpart, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedures specified in paragraphs (f)(1) through (3) of this section.

(1) *Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test.* Submit the results of the performance test to the EPA via CEDRI, which can be accessed through the EPA's CDX (<https://cdx.epa.gov/>). The data must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website.

(2) *Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test.* The results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI.

(3) *Confidential business information (CBI).* The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot

later be claimed to be CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim, you must submit a complete file, including information claimed to be CBI, to the EPA. The file must be generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, CORE CBI Office, U.S. EPA Mailroom (C404-02), Attention: Group Leader, Measurement Policy Group, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described in paragraph (f)(1) and (2) of this section. All CBI claims must be asserted at the time of submission. Furthermore, under CAA section 114(c) emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

(g) *CEMS relative accuracy test audit (RATA) Performance evaluation reports.* Beginning no later than October 13, 2020, you must start submitting CEMS RATA performance evaluation reports in accordance with this paragraph (g). Unless otherwise specified in this subpart, within 60 days after the date of completing each continuous monitoring system performance evaluation (as defined in § 63.2), you must submit the results of the performance evaluation following the procedures specified in paragraphs (g)(1) through (3) of this section.

(1) *Performance evaluations of CMS measuring RATA pollutants that are supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation.* Submit the results of the performance evaluation to the EPA via CEDRI, which can be accessed through the EPA's CDX. The data must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the XML schema listed on the EPA's ERT website.

(2) *Performance evaluations of CMS measuring RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation.* The results of the performance evaluation must be included as an attachment in the ERT or

an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI.

(3) *Confidential business information (CBI).* The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot later be claimed to be CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim, you must submit a complete file, including information claimed to be CBI, to the EPA. The file must be generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, CORE CBI Office, U.S. EPA Mailroom (C404-02), Attention: Group Leader, Measurement Policy Group, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described in paragraphs (g)(1) and (2) of this section. All CBI claims must be asserted at the time of submission. Furthermore, under CAA section 114(c) emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

(h) *Claims of EPA system outage.* If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with that reporting requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (h)(1) through (7) of this section.

(1) You must have been or will be precluded from accessing CEDRI and submitting a required report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.

(2) The outage must have occurred within the period of time beginning five business days prior to the date that the submission is due.

(3) The outage may be planned or unplanned.

(4) You must submit notification to the Administrator in writing as soon as possible following the date you first

knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(5) You must provide to the Administrator a written description identifying:

(i) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;

(ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to EPA system outage;

(iii) A description of measures taken or to be taken to minimize the delay in reporting; and

(iv) The date by which you propose to report, or if you have already met that reporting requirement at the time of the notification, the date you reported.

(6) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(7) In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved.

(i) *Claims of force majeure.* If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of *force majeure* for failure to timely comply with that reporting requirement. To assert a claim of *force majeure*, you must meet the requirements outlined in paragraphs (i)(1) through (5) of this section.

(1) You may submit a claim if a *force majeure* event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this paragraph (i)(1), a *force majeure* event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (e.g., hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (e.g., large scale power outage).

(2) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(3) You must provide to the Administrator:

(i) A written description of the *force majeure* event;

(ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to the *force majeure* event;

(iii) A description of measures taken or to be taken to minimize the delay in reporting; and

(iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.

(4) The decision to accept the claim of *force majeure* and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(5) In any circumstance, the reporting must occur as soon as possible after the *force majeure* event occurs.

■ 21. Section 63.2525 is amended by revising the introductory text and paragraphs (a), (e)(1)(ii), (f), (h), and (j) and adding paragraphs (l) through (u) to read as follows:

**§ 63.2525 What records must I keep?**

You must keep the records specified in paragraphs (a) through (t) of this section.

(a) Except as specified in §§ 63.2450(e)(4), 63.2480(f), and 63.2485(p) and (q) and paragraph (t) of this section, each applicable record required by subpart A of this part and in referenced subparts F, G, SS, UU, WW, and GGG of this part and in referenced subpart F of 40 CFR part 65.

\* \* \* \* \*

(e) \* \* \*

(1) \* \* \*

(ii) You control the Group 2 batch process vents using a flare that meets the requirements of § 63.987 or § 63.2450(e)(5), as applicable.

\* \* \* \* \*

(f) A record of each time a safety device is opened to avoid unsafe conditions in accordance with § 63.2450(p).

\* \* \* \* \*

(h) Except as specified in paragraph (l) of this section, for each CEMS, you must keep records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

\* \* \* \* \*

(j) In the SSMP required by § 63.6(e)(3) of subpart A, you are not required to include Group 2 emission points, unless those emission points are used in an emissions average. For equipment leaks, the SSMP requirement is limited to control devices and is optional for other equipment. On and after August 12, 2023, this paragraph (j) no longer applies.

\* \* \* \* \*

(l) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (h) of this section no longer applies. Instead, for each deviation from an emission limit, operating limit, or work practice standard, you must keep a record of the information specified in paragraph (l)(1) through (3) of this section. The records shall be maintained as specified in § 63.10(b)(1) of subpart A.

(1) In the event that an affected unit does not meet an applicable standard, record the number of deviations. For each deviation record the date, time, and duration of each deviation.

(2) For each deviation from an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.

(3) Record actions taken to minimize emissions in accordance with § 63.2450(u) and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(m) For each flare subject to the requirements in § 63.2450(e)(5), you must keep records specified in paragraphs (m)(1) through (14) of this section in lieu of the information required in § 63.998(a)(1) of subpart SS.

(1) Retain records of the output of the monitoring device used to detect the presence of a pilot flame or flare flame as required in § 63.670(b) of subpart CC and the presence of a pilot flame as required in § 63.2450(e)(5)(viii)(D) for a minimum of 2 years. Retain records of each 15-minute block during which there was at least one minute that no pilot flame or flare flame is present when regulated material is routed to a flare for a minimum of 5 years. For a pressure-assisted multi-point flare that uses cross-lighting, retain records of each 15-minute block during which there was at least one minute that no pilot flame is present on each stage when regulated material is routed to a flare for a minimum of 5 years. You may reduce the collected minute-by-minute data to a 15-minute block basis with an indication of whether there was at least one minute where no pilot flame or flare flame was present.

(2) Retain records of daily visible emissions observations as specified in paragraphs (m)(2)(i) through (iv) of this section, as applicable, for a minimum of 3 years.

(i) To determine when visible emissions observations are required, the record must identify all periods when regulated material is vented to the flare.

(ii) If visible emissions observations are performed using Method 22 of 40

CFR part 60, appendix A-7, then the record must identify whether the visible emissions observation was performed, the results of each observation, total duration of observed visible emissions, and whether it was a 5-minute or 2-hour observation. Record the date and start time of each visible emissions observation.

(iii) If a video surveillance camera is used pursuant to § 63.670(h)(2) of subpart CC, then the record must include all video surveillance images recorded, with time and date stamps.

(iv) For each 2 hour period for which visible emissions are observed for more than 5 minutes in 2 consecutive hours, then the record must include the date and start and end time of the 2 hour period and an estimate of the cumulative number of minutes in the 2 hour period for which emissions were visible.

(3) The 15-minute block average cumulative flows for flare vent gas and, if applicable, total steam, perimeter assist air, and premix assist air specified to be monitored under § 63.670(i) of subpart CC, along with the date and time interval for the 15-minute block. If multiple monitoring locations are used to determine cumulative vent gas flow, total steam, perimeter assist air, and premix assist air, then retain records of the 15-minute block average flows for each monitoring location for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years. If pressure and temperature monitoring is used, then retain records of the 15-minute block average temperature, pressure, and molecular weight of the flare vent gas or assist gas stream for each measurement location used to determine the 15-minute block average cumulative flows for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years.

(4) The flare vent gas compositions specified to be monitored under § 63.670(j) of subpart CC. Retain records of individual component concentrations from each compositional analysis for a minimum of 2 years. If an NHVvg analyzer is used, retain records of the 15-minute block average values for a minimum of 5 years.

(5) Each 15-minute block average operating parameter calculated following the methods specified in § 63.670(k) through (n) of subpart CC, as applicable.

(6) All periods during which operating values are outside of the applicable operating limits specified in §§ 63.670(d) through (f) of subpart CC

and 63.2450(e)(5)(viii) when regulated material is being routed to the flare.

(7) All periods during which you do not perform flare monitoring according to the procedures in § 63.670(g) through (j) of subpart CC.

(8) For pressure-assisted multi-point flares, if a stage of burners on the flare uses cross-lighting, then a record of any changes made to the distance between burners.

(9) For pressure-assisted multi-point flares, all periods when the pressure monitor(s) on the main flare header show burners are operating outside the range of the manufacturer's specifications. Indicate the date and time for each period, the pressure measurement, the stage(s) and number of burners affected, and the range of manufacturer's specifications.

(10) For pressure-assisted multi-point flares, all periods when the staging valve position indicator monitoring system indicates a stage of the pressure-assisted multi-point flare should not be in operation and when a stage of the pressure-assisted multi-point flare should be in operation and is not. Indicate the date and time for each period, whether the stage was supposed to be open, but was closed or vice versa, and the stage(s) and number of burners affected.

(11) Records of periods when there is flow of vent gas to the flare, but when there is no flow of regulated material to the flare, including the start and stop time and dates of periods of no regulated material flow.

(12) Records when the flow of vent gas exceeds the smokeless capacity of the flare, including start and stop time and dates of the flaring event.

(13) Records of the root cause analysis and corrective action analysis conducted as required in §§ 63.670(o)(3) of subpart CC and 63.2450(e)(5)(v), including an identification of the affected flare, the date and duration of the event, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.670(o)(5)(i) of subpart CC.

(14) For any corrective action analysis for which implementation of corrective actions are required in § 63.670(o)(5) of subpart CC, a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(n) For each flow event from a bypass line subject to the requirements in § 63.2450(e)(6), you must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements specified in Tables 1 through 7 to this subpart, you must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.

(o) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.2450(e)(7), you must keep the applicable records specified in paragraphs (o)(1) through (4) of this section.

(1) Outlet HAP or TOC concentration for each adsorber bed measured during each performance test conducted.

(2) Daily outlet HAP or TOC concentration.

(3) Date and time you last replaced the adsorbent.

(4) If you conduct monitoring less frequently than daily as specified in § 63.2450(e)(7)(iii)(B), you must record the average life of the bed.

(p) For each maintenance vent opening subject to the requirements in § 63.2450(v), you must keep the applicable records specified in paragraphs (p)(1) through (5) of this section.

(1) You must maintain standard site procedures used to deinventory equipment for safety purposes (e.g., hot work or vessel entry procedures) to document the procedures used to meet the requirements in § 63.2450(v). The current copy of the procedures must be retained and available on-site at all times. Previous versions of the standard site procedures, as applicable, must be retained for five years.

(2) If complying with the requirements of § 63.2450(v)(1)(i) and the lower explosive limit at the time of the vessel opening exceeds 10 percent, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and the lower explosive limit at the time of the vessel opening.

(3) If complying with the requirements of § 63.2450(v)(1)(ii) and either the vessel pressure at the time of the vessel opening exceeds 5 psig or the lower explosive limit at the time of the active purging was initiated exceeds 10 percent, identification of the

maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, the pressure of the vessel or equipment at the time of discharge to the atmosphere and, if applicable, the lower explosive limit of the vapors in the equipment when active purging was initiated.

(4) If complying with the requirements of § 63.2450(v)(1)(iii), records of the estimating procedures used to determine the total quantity of VOC in the equipment and the type and size limits of equipment that contain less than 50 pounds of VOC at the time of maintenance vent opening. For each maintenance vent opening that contains greater than 50 pounds of VOC for which the deinventory procedures specified in paragraph (p)(1) of this section are not followed or for which the equipment opened exceeds the type and size limits established in the records specified in this paragraph (p)(4), records that identify the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and records used to estimate the total quantity of VOC in the equipment at the time the maintenance vent was opened to the atmosphere.

(5) If complying with the requirements of § 63.2450(v)(1)(iv), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, records documenting actions taken to comply with other applicable alternatives and why utilization of this alternative was required, the date of maintenance vent opening, the equipment pressure and lower explosive limit of the vapors in the equipment at the time of discharge, an indication of whether active purging was performed and the pressure of the equipment during the installation or removal of the blind if active purging was used, the duration the maintenance vent was open during the blind installation or removal process, and records used to estimate the total quantity of VOC in the equipment at the time the maintenance vent was opened to the atmosphere for each applicable maintenance vent opening.

(q) For each pressure relief device subject to the pressure release management work practice standards in § 63.2480(e), you must keep the records specified in paragraphs (q)(1) through (3) of this section.

(1) Records of the prevention measures implemented as required in § 63.2480(e)(3)(ii).

(2) Records of the number of releases during each calendar year and the number of those releases for which the root cause was determined to be a *force majeure* event. Keep these records for the current calendar year and the past 5 calendar years.

(3) For each release to the atmosphere, you must keep the records specified in paragraphs (q)(3)(i) through (iv) of this section.

(i) The start and end time and date of each pressure release to the atmosphere.

(ii) Records of any data, assumptions, and calculations used to estimate of the mass quantity of each organic HAP released during the event.

(iii) Records of the root cause analysis and corrective action analysis conducted as required in § 63.2480(e)(3)(iii), including an identification of the affected facility, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.2480(e)(7)(i).

(iv) For any corrective action analysis for which implementation of corrective actions are required in § 63.2480(e)(7), a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(r) For each heat exchange system, beginning no later than the compliance dates specified in § 63.2445(g), the recordkeeping requirements of § 63.104(f)(1) no longer apply; instead, you must keep records in paragraphs (r)(1) through (4) of this section.

(1) Monitoring data required by § 63.2490(d) that indicate a leak, the date the leak was detected, or, if applicable, the basis for determining there is no leak.

(2) The dates of efforts to repair leaks.

(3) The method or procedures used to confirm repair of a leak and the date the repair was confirmed.

(4) Documentation of delay of repair as specified in paragraphs (r)(4)(i) through (iv) of this section.

(i) The reason(s) for delaying repair.

(ii) A schedule for completing the repair as soon as practical.

(iii) The date and concentration or mass emissions rate of the leak as first identified and the results of all subsequent monitoring events during the delay of repair.

(iv) An estimate of the potential total hydrocarbon emissions from the leaking heat exchange system or heat exchanger

for each required delay of repair monitoring interval following the procedures in paragraphs (r)(4)(iv)(A) through (C) of this section.

(A) If you comply with the total strippable hydrocarbon concentration leak action level, as specified in § 63.2490(d)(1)(iv), you must calculate the mass emissions rate by complying with the requirements of § 63.2490(d)(1)(iii)(B) or by determining the mass flow rate of the cooling water at the monitoring location where the leak was detected. If the monitoring location is an individual cooling tower riser, determine the total cooling water mass flow rate to the cooling tower. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. If you determine the mass flow rate of the cooling water, calculate the mass emissions rate by converting the stripping gas leak concentration (in ppmv as methane) to an equivalent liquid concentration, in parts per million by weight (ppmw), using equation 7-1 from "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14) and multiply the equivalent liquid concentration by the mass flow rate of the cooling water.

(B) For delay of repair monitoring intervals prior to repair of the leak, calculate the potential total hydrocarbon emissions for the leaking heat exchange system or heat exchanger for the monitoring interval by multiplying the mass emissions rate, determined in § 63.2490(d)(1)(iii)(B) or paragraph (r)(4)(iv)(A) of this section, by the duration of the delay of repair monitoring interval. The duration of the delay of repair monitoring interval is the time period starting at midnight on the day of the previous monitoring event or at midnight on the day the repair would have had to be completed if the repair had not been delayed, whichever is later, and ending at midnight of the day the of the current monitoring event.

(C) For delay of repair monitoring intervals ending with a repaired leak, calculate the potential total hydrocarbon emissions for the leaking heat exchange system or heat exchanger for the final delay of repair monitoring interval by multiplying the duration of the final delay of repair monitoring interval by the mass emissions rate determined for the last monitoring event prior to the re-monitoring event used to verify the leak was repaired. The duration of the final delay of repair monitoring interval is the time period starting at midnight of the

day of the last monitoring event prior to re-monitoring to verify the leak was repaired and ending at the time of the re-monitoring event that verified that the leak was repaired.

(s) For process vents and storage tanks in ethylene oxide service subject to the requirements of § 63.2493, you must keep the records specified in paragraphs (s)(1) through (5) of this section in addition to those records specified in paragraph (a) of this section. Records for equipment in ethylene oxide service subject to the requirements of § 63.2493 are specified in paragraph (a) of this section.

(1) For process vents, include all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations you used to determine the total uncontrolled ethylene oxide mass emission rate for the sum of all vent gas streams.

(2) For storage tanks, records of the concentration of ethylene oxide of the fluid stored in each storage tank.

(3) For equipment, records of the percent ethylene oxide content of the process fluid and the method used to determine it.

(4) If you vent emissions through a closed-vent system to a non-flare control device, then you must keep records of all periods during which operating values are outside of the applicable operating limits specified in § 63.2493(b)(4) through (6) when regulated material is being routed to the non-flare control device. The record must specify the operating parameter, the applicable limit, and the highest (for maximum operating limits) or lowest (for minimum operating limits) value recorded during the period.

(5) For pressure vessels subject to § 63.2493(c), records as specified in paragraphs (s)(5)(i) through (iv) of this section.

(i) The date of each performance test conducted according to § 63.2493(c)(2).

(ii) The instrument reading of each performance test conducted according to § 63.2493(c)(2), including the following:

(A) Date each defect was detected.

(B) Date of the next performance test that shows the instrument reading is less than 500 ppmv.

(C) Start and end dates of each period after the date in paragraph (s)(5)(ii)(A) of this section when the pressure vessel was completely empty.

(D) Estimated emissions from each defect.

(t) Any records required to be maintained by this part that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain

electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.

(u) Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (u)(1) through (8) of this section do not apply when demonstrating compliance with paragraph (a) of this section.

(1) Section 63.103(c)(2)(i) of subpart F.

(2) Section 63.103(c)(2)(ii) of subpart F.

(3) The phrase "start-up, shutdown and malfunction and" from § 63.103(c)(3) of subpart F.

(4) The phrase "other than startups, shutdowns, or malfunctions (e.g., a temperature reading of -200 °C on a boiler)," from § 63.152(g)(1)(i) of subpart G.

(5) The phrase "other than a startup, shutdown, or malfunction" from § 63.152(g)(1)(ii)(C) of subpart G.

(6) The phrase "other than startups, shutdowns, or malfunctions" from § 63.152(g)(1)(iii) of subpart G.

(7) The phrase "other than a startup, shutdown, or malfunction" from § 63.152(g)(2)(iii) of subpart G.

(8) Section 63.152(g)(2)(iv)(A) of subpart G.

■ 22. Section 63.2535 is amended by revising the introductory text and paragraphs (d) and (k) and adding paragraph (m) to read as follows:

**§ 63.2535 What compliance options do I have if part of my plant is subject to both this subpart and another subpart?**

For any equipment, emission stream, or wastewater stream not subject to § 63.2493 but subject to other provisions of both this subpart and another subpart, you may elect to comply only with the provisions as specified in paragraphs (a) through (l) of this section. You also must identify the subject equipment, emission stream, or wastewater stream, and the provisions with which you will comply, in your notification of compliance status report required by § 63.2520(d).

\* \* \* \* \*

(d) *Compliance with subpart I, GGG, or MMM of this part.* After the compliance dates specified in § 63.2445, if you have an affected source with equipment subject to subpart I, GGG, or MMM of this part, you may elect to comply with the provisions of subpart H, GGG, or MMM of this part, respectively, for all such equipment, except the affirmative defense

requirements in subparts GGG and MMM no longer apply.

\* \* \* \* \*

(k) *Compliance with 40 CFR part 60, subpart VV or VVa, and 40 CFR part 61, subpart V.* Except as specified in paragraphs (k)(1) and (2) of this section, after the compliance date specified in § 63.2445, if you have an affected source with equipment that is also subject to the requirements of 40 CFR part 60, subpart VV or VVa, or 40 CFR part 61, subpart V, you may elect to apply this subpart to all such equipment. After the compliance date specified in § 63.2445, if you have an affected source with equipment to which this subpart does not apply, but which is subject to the requirements of 40 CFR part 60, subpart VV or VVa, or 40 CFR part 61, subpart V, you may elect to apply this subpart to all such equipment. If you elect either of the methods of compliance in this paragraph (k), you must consider all total organic compounds, minus methane and ethane, in such equipment for purposes of compliance with this subpart, as if they were organic HAP. Compliance with the provisions of this subpart, in the manner described in this paragraph (k), will constitute compliance with 40 CFR part 60, subpart VV or VVa, and 40 CFR part 61, subpart V, as applicable.

(1) The provision in § 63.2480(b)(4) does not apply to connectors in gas/vapor and light liquid service that are subject to monitoring under 40 CFR 60.482-11a if complying with the compliance option in this paragraph (k).

(2) Beginning no later than the compliance dates specified in § 63.2445(g), equipment that must be controlled according to this subpart and subpart VVa of 40 CFR part 60 is required only to comply with the equipment leak requirements of this subpart, except you must also comply with the calibration drift assessment requirements specified at 40 CFR 60.485a(b)(2) if they are required to do so in subpart VVa of 40 CFR part 60. When complying with the calibration drift assessment requirements at 40 CFR 60.485a(b)(2), the requirement at 40 CFR 60.486a(e)(8)(v) to record the instrument reading for each scale used applies.

\* \* \* \* \*

(m) *Overlap of this subpart with other regulations for flares.* (1) Beginning no later than the compliance dates specified in § 63.2445(g), flares that control ethylene oxide emissions from affected sources in ethylene oxide service as defined in § 63.2550 or are used to control emissions from MCPUs that produce olefins and polyolefins, subject to the provisions of 40 CFR

60.18 or 63.11, and used as a control device for an emission point subject to the emission limits and work practice standards in Tables 1, 2, 4 or 5 to this subpart are required to comply only with the provisions specified in § 63.2450(e)(5). At any time before the compliance dates specified in § 63.2445(g), flares that are subject to the provisions of 40 CFR 60.18 or 63.11 and elect to comply with the requirements in § 63.2450(e)(5) are required to comply only with the provisions specified in this subpart. For purposes of compliance with this paragraph (m), "MCPUs that produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

(2) Beginning no later than the compliance dates specified in § 63.2445(g), flares subject to § 63.987 and used as a control device for an emission point subject to the emission limits and work practice standards in Tables 1, 2, 4 or 5 to this subpart are only required to comply with § 63.2450(e)(5).

(3) Beginning no later than the compliance dates specified in § 63.2445(g), flares subject to the requirements in subpart CC of this part and used as a control device for an emission point subject to the emission limits and work practice standards in Tables 1, 2, 4 or 5 to this subpart are only required to comply with the flare requirements in subpart CC of this part. This paragraph (m)(3) does not apply to multi-point pressure assisted flares.

■ 23. Section 63.2545 is amended by revising paragraph (b) introductory text and adding paragraph (b)(5) to read as follows:

**§ 63.2545 Who implements and enforces this subpart?**

\* \* \* \* \*

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under subpart E of this part, the authorities contained in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and are not delegated to the state, local, or tribal agency.

\* \* \* \* \*

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

■ 24. Section 63.2550 is amended in paragraph (i) by:

- a. Revising paragraphs (4) and (8) in the definition of "Batch process vent";
- b. Adding, in alphabetical order, definitions for "Bench-scale process" and "Breakthrough";
- c. Adding paragraphs (8), (9), (10), and (11) in the definition of "Continuous process vent";
- d. Revising paragraph (3) in the definition of "Deviation";
- e. Adding, in alphabetical order, definitions for "Force majeure," "Heat exchange system," "In ethylene oxide service," and "Loading rack";
- f. Revising paragraph (6) in the definition of "Miscellaneous organic chemical manufacturing process"; and
- g. Adding, in alphabetical order, definitions for "Pressure release," "Pressure relief device," "Pressure vessel," "Relief valve," and "Thermal expansion relief valve."

The revisions and additions read as follows:

**§ 63.2550 What definitions apply to this subpart?**

\* \* \* \* \*

(i) \* \* \*

*Batch process vent* \* \* \*

(4) Gaseous streams routed to a fuel gas system(s) unless on and after August 12, 2023, the fuel gas system(s) supplies a flare of which 50 percent or more of the fuel gas burned in the flare is derived from an MCPU that has processes and/or equipment in ethylene oxide service, or produces olefins or polyolefins;

\* \* \* \* \*

(8) Except for batch process vents in ethylene oxide service, emission streams from emission episodes that are undiluted and uncontrolled containing less than 50 ppmv HAP are not part of any batch process vent. A vent from a unit operation, or a vent from multiple unit operations that are manifolded together, from which total uncontrolled HAP emissions are less than 200 lb/yr is not a batch process vent; emissions for all emission episodes associated with the unit operation(s) must be included in the determination of the total mass emitted. The HAP concentration or mass emission rate may be determined using any of the following: Process knowledge that no HAP are present in the emission stream; an engineering assessment as discussed in § 63.1257(d)(2)(ii), except that you do not need to demonstrate that the equations in § 63.1257(d)(2)(i) do not apply, and the precompliance reporting requirements specified in § 63.1257(d)(2)(ii)(E) do not apply for the purposes of this demonstration; equations specified in § 63.1257(d)(2)(i), as applicable; test data using Method 18

of 40 CFR part 60, appendix A; or any other test method that has been validated according to the procedures in EPA Method 301 of appendix A to this part.

*Bench-scale process* means a process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

\* \* \* \* \*

*Breakthrough* means the time when the level of HAP or TOC, measured at the outlet of the first bed, has been detected is at the highest concentration allowed to be discharged from the adsorber system and indicates that the adsorber bed should be replaced.

\* \* \* \* \*

*Continuous process vent* \* \* \*

(8) On and after August 12, 2023, § 63.107(h)(3) applies unless the fuel gas system supplies a flare of which 50 percent or more of the fuel gas burned in the flare is derived from an MCPU that has processes and/or equipment in ethylene oxide service, or produces olefins or polyolefins.

(9) On and after August 12, 2023, § 63.107(h)(9) no longer applies.

(10) On and after August 12, 2023, § 63.107(i) no longer applies. Instead, a process vent is the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream meets the criteria specified in this paragraph. The gas stream would meet the characteristics specified in § 63.107(b) through (g) of subpart F, but, for purposes of avoiding applicability, has been deliberately interrupted, temporarily liquefied, routed through any item of equipment for no process purpose, or disposed of in a flare that does not meet the criteria in § 63.11(b) of subpart A or § 63.2450(e)(5) as applicable, or an incinerator that does not reduce emissions of organic HAP by 98 percent or to a concentration of 20 parts per million by volume, whichever is less stringent.

(11) Section 63.107(d) does not apply to continuous process vents in ethylene oxide service.

\* \* \* \* \*

*Deviation* \* \* \*

(3) Before August 12, 2023, fails to meet any emission limit, 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. On and after August 12, 2023, this paragraph (3) no longer applies.

\* \* \* \* \*

*Force majeure* event means a release of HAP, either directly to the atmosphere from a pressure relief device or discharged via a flare, that is demonstrated to the satisfaction of the Administrator to result from an event beyond the owner or operator's control, such as natural disasters; acts of war or terrorism; loss of a utility external to the MCPU (e.g., external power curtailment), excluding power curtailment due to an interruptible service agreement; and fire or explosion originating at a near or adjoining facility outside of the miscellaneous organic chemical manufacturing process unit that impacts the miscellaneous organic chemical manufacturing process unit's ability to operate.

\* \* \* \* \*

*Heat exchange system* means a device or collection of devices used to transfer heat from process fluids to water without intentional direct contact of the process fluid with the water (i.e., non-contact heat exchanger) and to transport and/or cool the water in a closed-loop recirculation system (cooling tower system) or a once-through system (e.g., river or pond water). For closed-loop recirculation systems, the heat exchange system consists of a cooling tower, all miscellaneous organic chemical manufacturing process unit heat exchangers that are in organic HAP service, as defined in this subpart, serviced by that cooling tower, and all water lines to and from these miscellaneous organic chemical manufacturing process unit heat exchangers. For once-through systems, the heat exchange system consists of all heat exchangers that are in organic HAP service, as defined in this subpart, servicing an individual miscellaneous organic chemical manufacturing process unit and all water lines to and from these heat exchangers. Sample coolers or pump seal coolers are not considered heat exchangers for the purpose of this definition and are not part of the heat exchange system. Intentional direct contact with process fluids results in the formation of a wastewater.

\* \* \* \* \*

*In ethylene oxide service* means the following:

(1) For equipment leaks, any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide. If information exists that suggests ethylene oxide could be present in equipment,

the equipment is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in § 63.2492 to demonstrate that the equipment does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in equipment, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.

(2) For process vents, each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). If information exists that suggests ethylene oxide could be present in a batch or continuous process vent, then the batch or continuous process vent is considered to be "in ethylene oxide service" unless an analysis is performed as specified in § 63.2492 to demonstrate that the batch or continuous process vent does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a batch or continuous process vent, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.

(3) For storage tanks, storage tanks of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a storage tank, then the storage tank is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in § 63.2492 to demonstrate that the storage tank does not meet the definition of being "in ethylene oxide service". The exemptions for "vessels storing organic liquids that contain HAP only as impurities" and "pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere" listed in the definition of "storage tank" in this section do not apply for storage tanks that may be in ethylene oxide service. Examples of information that could suggest ethylene oxide could be present in a storage tank, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the

results are still relevant to the current operating conditions.

\* \* \* \* \*

*Loading rack* means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

\* \* \* \* \*

*Miscellaneous organic chemical manufacturing process* \* \* \*

(6) The end of a process that produces a solid material is either up to and including the dryer or extruder, or for a polymer production process without a dryer or extruder, it is up to and including the die plate or solid-state reactor, except in two cases. If the dryer, extruder, die plate, or solid-state reactor is followed by an operation that is designed and operated to remove HAP solvent or residual HAP monomer from the solid, then the solvent removal operation is the last step in the process. If the dried solid is diluted or mixed with a HAP-based solvent, then the solvent removal operation is the last step in the process.

\* \* \* \* \*

*Pressure release* means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period.

*Pressure relief device* means a valve, rupture disk, or similar device used only to release an unplanned, nonroutine discharge of gas from process equipment in order to avoid safety hazards or equipment damage. A pressure relief device discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause. Such devices include conventional, spring-actuated relief valves, balanced bellows relief valves, pilot-operated relief valves, rupture disks, and breaking, buckling, or shearing pin devices. Devices that are actuated either by a pressure of less than or equal to 2.5 pounds per square inch gauge or by a vacuum are not pressure relief devices.

*Pressure vessel* means a storage vessel that is used to store liquids or gases and is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the pressure vessel during filling of the pressure vessel to its design capacity.

\* \* \* \* \*

*Relief valve* means a type of pressure relief device that is designed to re-close after the pressure relief.  
\* \* \* \* \*

*Thermal expansion relief valve* means a pressure relief valve designed to protect equipment from excess pressure due to thermal expansion of blocked liquid-filled equipment or piping due to

ambient heating or heat from a heat tracing system. Pressure relief valves designed to protect equipment from excess pressure due to blockage against a pump or compressor or due to fire contingency are not thermal expansion relief valves.  
\* \* \* \* \*

■ 25. Table 1 to subpart FFFF of part 63 is revised to read as follows:

As required in § 63.2455, you must meet each emission limit and work practice standard in the following table that applies to your continuous process vents:

TABLE 1 TO SUBPART FFFF OF PART 63—EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR CONTINUOUS PROCESS VENTS

For each . . .	For which . . .	Then you must . . .
1. Group 1 continuous process vent	a. Not applicable .....	i. Reduce emissions of total organic HAP by ≥98 percent by weight or to an outlet process concentration ≤20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination of control devices (except a flare); or ii. Reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare; or iii. Use a recovery device to maintain the TRE above 1.9 for an existing source or above 5.0 for a new source.
2. Halogenated Group 1 continuous process vent stream.	a. You use a combustion control device to control organic HAP emissions.	i. Use a halogen reduction device after the combustion device to reduce emissions of hydrogen halide and halogen HAP by ≥99 percent by weight, or to ≤0.45 kg/hr, or to ≤20 ppmv; or ii. Use a halogen reduction device before the combustion device to reduce the halogen atom mass emission rate to ≤0.45 kg/hr or to a concentration ≤20 ppmv.
3. Group 2 continuous process vent at an existing source.	You use a recovery device to maintain the TRE level >1.9 but ≤5.0.	Comply with the requirements in § 63.2450(e)(4) and the requirements in § 63.993 and the requirements referenced therein.
4. Group 2 continuous process vent at a new source.	You use a recovery device to maintain the TRE level >5.0 but ≤8.0.	Comply with the requirements in § 63.2450(e)(4) and the requirements in § 63.993 and the requirements referenced therein.
5. Continuous process vent .....	Beginning no later than the compliance dates specified in § 63.2445(i), the continuous process vent contains ethylene oxide such that it is considered to be in ethylene oxide service as defined in § 63.2550.	Comply with the applicable emission limits specified in items 1 through 4 of this Table, and also: i. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare; or ii. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a control device that reduces ethylene oxide by ≥99.9 percent by weight, or to a concentration <1 ppmv for each process vent or to <5 pounds per year for all combined process vents.

■ 26. Table 2 to subpart FFFF of part 63 is revised to read as follows:

As required in § 63.2460, you must meet each emission limit and work

practice standard in the following table that applies to your batch process vents:

TABLE 2 TO SUBPART FFFF OF PART 63—EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR BATCH PROCESS VENTS

For each . . .	Then you must . . .	And you must . . .
1. Process with Group 1 batch process vents.	a. Reduce collective uncontrolled organic HAP emissions from the sum of all batch process vents within the process by ≥98 percent by weight by venting emissions from a sufficient number of the vents through one or more closed-vent systems to any combination of control devices (except a flare); or b. Reduce collective uncontrolled organic HAP emissions from the sum of all batch process vents within the process by ≥95 percent by weight by venting emissions from a sufficient number of the vents through one or more closed-vent systems to any combination of recovery devices or a biofilter, except you may elect to comply with the requirements of subpart WW of this part for any process tank; or	Not applicable.  Not applicable.

TABLE 2 TO SUBPART FFFF OF PART 63—EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR BATCH PROCESS VENTS—Continued

For each . . .	Then you must . . .	And you must . . .
<p>2. Halogenated Group 1 batch process vent for which you use a combustion device to control organic HAP emissions.</p> <p>3. Batch process vent that contains ethylene oxide such that it is considered to be in ethylene oxide service as defined in § 63.2550.</p>	<p>c. Reduce uncontrolled organic HAP emissions from one or more batch process vents within the process by venting through a closed-vent system to a flare or by venting through one or more closed-vent systems to any combination of control devices (excluding a flare) that reduce organic HAP to an outlet concentration ≤20 ppmv as TOC or total organic HAP.</p> <p>a. Use a halogen reduction device after the combustion control device; or</p> <p>b. Use a halogen reduction device before the combustion control device.</p> <p>Beginning no later than the compliance dates specified in § 63.2445(i), comply with the applicable emission limits specified in items 1 and 2 of this Table, and also:</p> <p>i. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare; or</p> <p>ii. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a control device that reduces ethylene oxide by ≥99.9 percent by weight, or to a concentration &lt;1 ppmv for each process vent or to &lt;5 pounds per year for all combined process vents.</p>	<p>For all other batch process vents within the process, reduce collective organic HAP emissions as specified in item 1.a and/or item 1.b of this Table.</p> <p>i. Reduce overall emissions of hydrogen halide and halogen HAP by ≥99 percent; or</p> <p>ii. Reduce overall emissions of hydrogen halide and halogen HAP to ≤0.45 kg/hr; or</p> <p>iii. Reduce overall emissions of hydrogen halide and halogen HAP to a concentration ≤20 ppmv.</p> <p>Reduce the halogen atom mass emission rate to ≤0.45 kg/hr or to a concentration ≤20 ppmv.</p> <p>Not applicable.</p>

■ 27. Table 4 to subpart FFFF of part 63 is revised to read as follows: As required in § 63.2470, you must meet each emission limit in the following table that applies to your storage tanks:

TABLE 4 TO SUBPART FFFF OF PART 63—EMISSION LIMITS FOR STORAGE TANKS

For each . . .	For which . . .	Then you must . . .
1. Group 1 storage tank .....	<p>a. The maximum true vapor pressure of total HAP at the storage temperature is ≥76.6 kilopascals.</p> <p>b. The maximum true vapor pressure of total HAP at the storage temperature is &lt;76.6 kilopascals.</p>	<p>i. Reduce total HAP emissions by ≥95 percent by weight or to ≤20 ppmv of TOC or organic HAP and ≤20 ppmv of hydrogen halide and halogen HAP by venting emissions through a closed vent system to any combination of control devices (excluding a flare); or</p> <p>ii. Reduce total organic HAP emissions by venting emissions through a closed vent system to a flare; or</p> <p>iii. Comply with the requirements in § 63.2450(e)(4), as applicable; and reduce total HAP emissions by venting emissions to a fuel gas system or process in accordance with § 63.982(d) and the requirements referenced therein.<sup>1</sup></p> <p>i. Comply with the requirements of subpart WW of this part, except as specified in § 63.2470; or</p> <p>ii. Reduce total HAP emissions by ≥95 percent by weight or to ≤20 ppmv of TOC or organic HAP and ≤20 ppmv of hydrogen halide and halogen HAP by venting emissions through a closed vent system to any combination of control devices (excluding a flare); or</p> <p>iii. Reduce total organic HAP emissions by venting emissions through a closed vent system to a flare; or</p> <p>iv. Comply with the requirements in § 63.2450(e)(4), as applicable; and reduce total HAP emissions by venting emissions to a fuel gas system or process in accordance with § 63.982(d) and the requirements referenced therein.<sup>1</sup></p>
2. Halogenated vent stream from a Group 1 storage tank.	You use a combustion control device to control organic HAP emissions.	Meet one of the emission limit options specified in Item 2.a.i or ii. in Table 1 to this subpart.

TABLE 4 TO SUBPART FFFF OF PART 63—EMISSION LIMITS FOR STORAGE TANKS—Continued

For each . . .	For which . . .	Then you must . . .
3. Storage tank of any capacity and vapor pressure.	Beginning no later than the compliance dates specified in § 63.2445(i), the stored liquid contains ethylene oxide such that the storage tank is considered to be in ethylene oxide service as defined in § 63.2550.	Comply with the applicable emission limits specified in items 1 and 2 of this Table, and also: <ul style="list-style-type: none"> <li>i. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare; or</li> <li>ii. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a control device that reduces ethylene oxide by ≥99.9 percent by weight, or to a concentration &lt;1 ppmv for each storage tank vent.</li> </ul>

<sup>1</sup> Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that “produces olefins or polyolefins” includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

■ 28. Table 5 to subpart FFFF of part 63 is revised to read as follows: As required in § 63.2475, you must meet each emission limit and work practice standard in the following table that applies to your transfer racks:

TABLE 5 TO SUBPART FFFF OF PART 63—EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR TRANSFER RACKS

For each . . .	You must . . .
1. Group 1 transfer rack .....	<ul style="list-style-type: none"> <li>a. Reduce emissions of total organic HAP by ≥98 percent by weight or to an outlet concentration ≤20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination of control devices (except a flare); or</li> <li>b. Reduce emissions of total organic HAP by venting emissions through a closed-vent system to a flare; or</li> <li>c. Comply with the requirements in § 63.2450(e)(4), as applicable; and reduce emissions of total organic HAP by venting emissions to a fuel gas system or process in accordance with § 63.982(d) and the requirements referenced therein;<sup>1</sup> or</li> <li>d. Use a vapor balancing system designed and operated to collect organic HAP vapors displaced from tank trucks and railcars during loading and route the collected HAP vapors to the storage tank from which the liquid being loaded originated or to another storage tank connected by a common header.</li> </ul>
2. Halogenated Group 1 transfer rack vent stream for which you use a combustion device to control organic HAP emissions.	<ul style="list-style-type: none"> <li>a. Use a halogen reduction device after the combustion device to reduce emissions of hydrogen halide and halogen HAP by ≥99 percent by weight, to ≤0.45 kg/hr, or to ≤20 ppmv; or</li> <li>b. Use a halogen reduction device before the combustion device to reduce the halogen atom mass emission rate to ≤0.45 kg/hr or to a concentration ≤20 ppmv.</li> </ul>

<sup>1</sup> Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that “produces olefins or polyolefins” includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

■ 29. Table 6 to subpart FFFF of part 63 is revised to read as follows: As required in § 63.2480, you must meet each requirement in the following table that applies to your equipment leaks:

TABLE 6 TO SUBPART FFFF OF PART 63—REQUIREMENTS FOR EQUIPMENT LEAKS

For all . . .	And that is part of . . .	You must . . .
1. Equipment that is in organic HAP service.	a. Any MCPU .....	<ul style="list-style-type: none"> <li>i. Comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in § 63.2480(b) and (d) through (f); or</li> <li>ii. Comply with the requirements of subpart H of this part and the requirements referenced therein, except as specified in § 63.2480(b) and (d) through (f); or</li> <li>iii. Comply with the requirements of 40 CFR part 65, subpart F, and the requirements referenced therein, except as specified in § 63.2480(c), and (d) through (f).</li> </ul>
2. Equipment that is in organic HAP service at a new source.	a. Any MCPU .....	<ul style="list-style-type: none"> <li>i. Comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in § 63.2480(b)(6) and (7), (e), and (f); or</li> <li>ii. Comply with the requirements of 40 CFR part 65, subpart F, except as specified in § 63.2480(c)(10) and (11), (e), and (f).</li> </ul>
3. Equipment that is in ethylene oxide service as defined in § 63.2550.	a. Any MCPU .....	<ul style="list-style-type: none"> <li>i. Beginning no later than the compliance dates specified in § 63.2445(i), comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in § 63.2493(d) and (e); or</li> </ul>

TABLE 6 TO SUBPART FFFF OF PART 63—REQUIREMENTS FOR EQUIPMENT LEAKS—Continued

For all . . .	And that is part of . . .	You must . . .
		ii. Beginning no later than the compliance dates specified in § 63.2445(i), comply with the requirements of subpart H of this part and the requirements referenced therein, except as specified in § 63.2493(d) and (e); iii. Beginning no later than the compliance dates specified in § 63.2445(i), comply with the requirements of 40 CFR part 65, subpart F, and the requirements referenced therein, except as specified in § 63.2493(d) and (e).

■ 30. Table 10 to subpart FFFF of part 63 is revised to read as follows: As required in § 63.2490, you must meet each requirement in the following table that applies to your heat exchange systems:

TABLE 10 TO SUBPART FFFF OF PART 63—WORK PRACTICE STANDARDS FOR HEAT EXCHANGE SYSTEMS

For each . . .	You must . . .
Heat exchange system, as defined in § 63.101	a. Comply with the requirements of § 63.104 and the requirements referenced therein, except as specified in § 63.2490(b) and (c); or b. Comply with the requirements in § 63.2490(d).

■ 31. Table 12 to subpart FFFF of part 63 is revised to read as follows: As specified in § 63.2540, the parts of the general provisions that apply to you are shown in the following table:

TABLE 12 TO SUBPART FFFF OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART FFFF

Citation	Subject	Explanation
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes.
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities	Yes.
§ 63.5	Construction/Reconstruction	Yes.
§ 63.6(a)	Applicability	Yes.
§ 63.6(b)(1)–(4)	Compliance Dates for New and Reconstructed sources	Yes.
§ 63.6(b)(5)	Notification	Yes.
§ 63.6(b)(6)	[Reserved]	
§ 63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major.	Yes.
§ 63.6(c)(1)–(2)	Compliance Dates for Existing Sources	Yes.
§ 63.6(c)(3)–(4)	[Reserved]	
§ 63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major.	Yes.
§ 63.6(d)	[Reserved]	
§ 63.6(e)(1)(i)	Operation & Maintenance	Yes, before August 12, 2023. No, beginning on and after August 12, 2023. See § 63.2450(u) for general duty requirement.
§ 63.6(e)(1)(ii)	Operation & Maintenance	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.6(e)(1)(iii)	Operation & Maintenance	Yes.
§ 63.6(e)(2)	[Reserved]	
§ 63.6(e)(3)(i), (iii), and (v) through (viii).	Startup, Shutdown, Malfunction Plan (SSMP)	Yes, before August 12, 2023, except information regarding Group 2 emission points and equipment leaks is not required in the SSMP, as specified in § 63.2525(j). No, beginning on and after August 12, 2023.
§ 63.6(e)(3)(iii) and (iv)	Recordkeeping and Reporting During SSM	No, see § 63.2525 for recordkeeping requirements and § 63.2520(e)(4) for reporting requirements.
§ 63.6(e)(3)(ix)	SSMP incorporation into title V permit	Yes, before August 12, 2023. No beginning on and after August 12, 2023.
§ 63.6(f)(1)	Compliance With Non-Opacity Standards Except During SSM.	No. See § 63.2445(g) through (i).
§ 63.6(f)(2)–(3)	Methods for Determining Compliance	Yes.
§ 63.6(g)(1)–(3)	Alternative Standard	Yes.
§ 63.6(h)(1)	Compliance with Opacity Standards Except During SSM.	No. See § 63.2445(g) through (i).

TABLE 12 TO SUBPART FFFF OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART FFFF—Continued

Citation	Subject	Explanation
§ 63.6(h)(2)–(9)	Opacity/Visible Emission (VE) Standards	Only for flares for which Method 22 of 40 CFR part 60, appendix A–7, observations are required as part of a flare compliance assessment.
§ 63.6(i)(1)–(14), and (16)	Compliance Extension	Yes.
§ 63.6(j)	Presidential Compliance Exemption	Yes.
§ 63.7(a)(1)–(2)	Performance Test Dates	Yes, except substitute 150 days for 180 days.
§ 63.7(a)(3)	Section 114 Authority	Yes, and this paragraph also applies to flare compliance assessments as specified under § 63.997(b)(2).
§ 63.7(a)(4)	Force Majeure	Yes.
§ 63.7(b)(1)	Notification of Performance Test	Yes.
§ 63.7(b)(2)	Notification of Rescheduling	Yes.
§ 63.7(c)	Quality Assurance/Test Plan	Yes, except the test plan must be submitted with the notification of the performance test if the control device controls batch process vents.
§ 63.7(d)	Testing Facilities	Yes.
§ 63.7(e)(1)	Conditions for Conducting Performance Tests	Yes, before August 12, 2023 except that performance tests for batch process vents must be conducted under worst-case conditions as specified in § 63.2460. No, beginning on and after August 12, 2023. See § 63.2450(g)(6).
§ 63.7(e)(2)	Conditions for Conducting Performance Tests	Yes.
§ 63.7(e)(3)	Test Run Duration	Yes.
§ 63.7(e)(4)	Administrator's Authority to Require Testing	Yes.
§ 63.7(f)	Alternative Test Method	Yes.
§ 63.7(g)	Performance Test Data Analysis	Yes, except this subpart specifies how and when the performance test and performance evaluation results are reported.
§ 63.7(h)	Waiver of Tests	Yes.
§ 63.8(a)(1)	Applicability of Monitoring Requirements	Yes.
§ 63.8(a)(2)	Performance Specifications	Yes.
§ 63.8(a)(3)	[Reserved]	
§ 63.8(a)(4)	Monitoring with Flares	Yes, except for flares subject to § 63.2450(e)(5).
§ 63.8(b)(1)	Monitoring	Yes.
§ 63.8(b)(2)–(3)	Multiple Effluents and Multiple Monitoring Systems	Yes.
§ 63.8(c)(1)	Monitoring System Operation and Maintenance	Yes.
§ 63.8(c)(1)(i)	Routine and Predictable SSM	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.8(c)(1)(ii)	CMS malfunction not in SSM plan	Yes.
§ 63.8(c)(1)(iii)	Compliance with Operation and Maintenance Requirements.	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.8(c)(2)–(3)	Monitoring System Installation	Yes.
§ 63.8(c)(4)	CMS Requirements	Only for CEMS. Requirements for CPMS are specified in referenced subparts G and SS of this part. Requirements for COMS do not apply because this subpart does not require continuous opacity monitoring systems (COMS).
§ 63.8(c)(4)(i)	COMS Measurement and Recording Frequency	No; this subpart does not require COMS.
§ 63.8(c)(4)(ii)	CEMS Measurement and Recording Frequency	Yes.
§ 63.8(c)(5)	COMS Minimum Procedures	No. This subpart does not contain opacity or VE limits.
§ 63.8(c)(6)	CMS Requirements	Only for CEMS; requirements for CPMS are specified in referenced subparts G and SS of this part. Requirements for COMS do not apply because this subpart does not require COMS.
§ 63.8(c)(7)–(8)	CMS Requirements	Only for CEMS. Requirements for CPMS are specified in referenced subparts G and SS of this part. Requirements for COMS do not apply because this subpart does not require COMS.
§ 63.8(d)(1)	CMS Quality Control	Only for CEMS.
§ 63.8(d)(2)	CMS Quality Control	Only for CEMS.
§ 63.8(d)(3)	CMS Quality Control	Yes, only for CEMS before August 12, 2023. No, beginning on and after August 12, 2023. See § 63.2450(j)(6).
§ 63.8(e)	CMS Performance Evaluation	Only for CEMS, except this subpart specifies how and when the performance evaluation results are reported. Section 63.8(e)(5)(ii) does not apply because this subpart does not require COMS.
§ 63.8(f)(1)–(5)	Alternative Monitoring Method	Yes, except you may also request approval using the precompliance report.
§ 63.8(f)(6)	Alternative to Relative Accuracy Test	Only applicable when using CEMS to demonstrate compliance, including the alternative standard in § 63.2505.

TABLE 12 TO SUBPART FFFF OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART FFFF—Continued

Citation	Subject	Explanation
§ 63.8(g)(1)–(4)	Data Reduction	Only when using CEMS, including for the alternative standard in § 63.2505, except that the requirements for COMS do not apply because this subpart has no opacity or VE limits, and § 63.8(g)(2) does not apply because data reduction requirements for CEMS are specified in § 63.2450(j).
§ 63.8(g)(5)	Data Reduction	No. Requirements for CEMS are specified in § 63.2450(j). Requirements for CPMS are specified in referenced subparts G and SS of this part.
§ 63.9(a)	Notification Requirements	Yes.
§ 63.9(b)(1)–(5)	Initial Notifications	Yes.
§ 63.9(c)	Request for Compliance Extension	Yes.
§ 63.9(d)	Notification of Special Compliance Requirements for New Source.	Yes.
§ 63.9(e)	Notification of Performance Test	Yes.
§ 63.9(f)	Notification of VE/Opacity Test	No.
§ 63.9(g)	Additional Notifications When Using CMS	Only for CEMS. Section 63.9(g)(2) does not apply because this subpart does not require COMS.
63.9(h)(1)–(6)	Notification of Compliance Status	Yes, except § 63.9(h)(2)(i)(A) through (G) and (h)(2)(ii) do not apply because § 63.2520(d) specifies the required contents and due date of the notification of compliance status report.
§ 63.9(i)	Adjustment of Submittal Deadlines	Yes.
§ 63.9(j)	Change in Previous Information	No, § 63.2520(e) specifies reporting requirements for process changes.
§ 63.10(a)	Recordkeeping/Reporting	Yes.
§ 63.10(b)(1)	Recordkeeping/Reporting	Yes.
§ 63.10(b)(2)(i)	Records related to startup and shutdown	No, see §§ 63.2450(e) and 63.2525 for recordkeeping requirements.
§ 63.10(b)(2)(ii)	Recordkeeping relevant to SSM periods and CMS	Yes, before August 12, 2023. No, beginning on and after August 12, 2023. See § 63.2525(h) and (l).
§ 63.10(b)(2)(iii)	Records related to maintenance of air pollution control equipment.	Yes.
§ 63.10(b)(2)(iv) and (v)	Recordkeeping relevant to SSM period	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.10(b)(2)(vi)	CMS Records	Before August 12, 2023, yes but only for CEMS; requirements for CPMS are specified in referenced subparts G and SS of this part. Beginning on and after August 12, 2023, yes for CEMS and CPMS for flares subject to § 63.2450(e)(5).
§ 63.10(b)(2)(x) and (xi)	CMS Records	Only for CEMS; requirements for CPMS are specified in referenced subparts G and SS of this part.
§ 63.10(b)(2)(vii)–(ix)	Records	Yes.
§ 63.10(b)(2)(xii)	Records	Yes.
§ 63.10(b)(2)(xiii)	Records	Only for CEMS.
§ 63.10(b)(2)(xiv)	Records	Yes.
§ 63.10(b)(3)	Records	Yes.
§ 63.10(c)(1)–(6),(9)–(14)	Records	Only for CEMS. Recordkeeping requirements for CPMS are specified in referenced subparts G and SS of this part.
§ 63.10(c)(7)–(8)	Records	No. Recordkeeping requirements are specified in § 63.2525.
§ 63.10(c)(15)	Records	Yes, before August 12, 2023, but only for CEMS. No, beginning on and after August 12, 2023.
§ 63.10(d)(1)	General Reporting Requirements	Yes.
§ 63.10(d)(2)	Report of Performance Test Results	Yes, before October 13, 2020. No, beginning on and after October 13, 2020.
§ 63.10(d)(3)	Reporting Opacity or VE Observations	No.
§ 63.10(d)(4)	Progress Reports	Yes.
§ 63.10(d)(5)(i)	Periodic Startup, Shutdown, and Malfunction Reports	No, § 63.2520(e)(4) and (5) specify the SSM reporting requirements.
§ 63.10(d)(5)(ii)	Immediate SSM Reports	No.
§ 63.10(e)(1)	Additional CEMS Reports	Yes.
§ 63.10(e)(2)(i)	Additional CMS Reports	Only for CEMS, except this subpart specifies how and when the performance evaluation results are reported.
§ 63.10(e)(2)(ii)	Additional COMS Reports	No. This subpart does not require COMS.
§ 63.10(e)(3)	Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(i)–(iii)	Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(iv)–(v)	Excess Emissions Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(iv)–(v)	Excess Emissions Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(vi)–(viii)	Excess Emissions Report and Summary Report	No. Reporting requirements are specified in § 63.2520.

TABLE 12 TO SUBPART FFFF OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART FFFF—Continued

Citation	Subject	Explanation
§ 63.10(e)(4) .....	Reporting COMS data .....	No.
§ 63.10(f) .....	Waiver for Recordkeeping/Reporting .....	Yes.
§ 63.11 .....	Control device requirements for flares and work practice requirements for equipment leaks.	Yes, except for flares subject to § 63.2450(e)(5).
§ 63.12 .....	Delegation .....	Yes.
§ 63.13 .....	Addresses .....	Yes.
§ 63.14 .....	Incorporation by Reference .....	Yes.
§ 63.15 .....	Availability of Information .....	Yes.

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