560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2023-0282; FRL-10854-02-OAR]

RIN 2060-AW01

National Emission Standards for Hazardous Air Pollutants: Polyether Polyols Production Industry Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is finalizing amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Polyether Polyols (PEPO) Production source category ("PEPO NESHAP") under Clean Air Act (CAA) section 112. Specifically, the EPA is finalizing certain ethylene oxide (EtO)-specific standards pursuant to CAA section 112(d)(6) rather than finalizing the proposed second residual risk review and corresponding amendments pursuant to CAA section 112(f)(2). In addition, the EPA is taking final action addressing certain issues raised in an administrative petition for reconsideration. Lastly, the EPA is finalizing maximum achievable control technology (MACT) standards for certain emission points, work practice standards for certain activities where alternatives are appropriate, performance testing requirements once every five years for certain process vents, and electronic reporting requirements for performance test reports, flare management plans, and periodic reports.

DATES: This final rule is effective on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. The Director of the Federal Register (FR) has approved incorporation by reference (IBR) of certain publications listed in the rule as of **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: The EPA established a docket for this action under Docket ID No. EPA-HQ-OAR-2023-0282. All documents in the docket are listed in *https://www.regulations.gov/*. Although listed, some information is not publicly available, *e.g.*, Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. The EPA does not place certain other material, such as copyrighted material, on the Internet; this material is publicly available only as portable document format (PDF) versions accessible on EPA computers in the docket office reading room. The public cannot download certain databases and physical items from the docket but may request these items by contacting the docket office at (202) 566-1744. The docket office has 10 business days to respond to these requests. With the exception of such material, publicly available docket materials are available electronically at *https://www.regulations.gov* or on EPA computers in the docket office reading room at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Time (ET), Monday through Friday. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: For information about this final rule, contact U.S. EPA, Attn: Johanna Klein, Mail Drop: Industrial Processing and Power Division (E143–01), 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-2283; and email address: *Klein.Johanna@epa.gov*.

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. Throughout this notice the use of "we," "us," or "our" refers to the EPA. The Agency uses multiple acronyms and terms in this

preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

ANSI	American National Standards Institute
APCD	air pollution control device
ASME	American Society of Mechanical Engineers
1-BP	1-bromopropane
CAA	Clean Air Act
CDX	Central Data Exchange
CEDRI	Compliance and Emissions Data Reporting Interface
CEMS	continuous emission monitoring system
CFR	Code of Federal Regulations
CMPU	chemical manufacturing process unit
CO	carbon monoxide
CO_2	carbon dioxide
EAV	equivalent annualized value
ECO	extended cookout
EIA	Economic Impacts Analysis
EPA	Environmental Protection Agency
ERT	Electronic Reporting Tool
EtO	Ethylene Oxide
Fe	Fraction emitted
kg/yr	kilograms per year
HAP	hazardous air pollutant(s)
HON	Hazardous Organic NESHAP
ICR	information collection request
IFR	internal floating roof
kPa	kilopascals
lb/hr	pounds per hour
lb/yr	pounds per year
LDAR	leak detection and repair
LEAN	Louisiana Environmental Action Network
LEL	lower explosive limit
m^3	cubic meters
MACT	maximum achievable control technology
MON	Miscellaneous Organic Chemical Manufacturing NESHAP
MTVP	maximum true vapor pressure
NAICS	North American Industry Classification System
NEI	National Emissions Inventory
NESHAP	national emission standards for hazardous air pollutants
NO_X	nitrogen oxides
NRDC	Natural Resources Defense Council
NTTAA	National Technology Transfer and Advancement Act
OAR	Office of Air and Radiation
OMB	Office of Management and Budget
PDF	portable document format
PEPO	polyether polyol(s)
PMPU	polyether polyol manufacturing process unit
ppmv	parts per million by volume
ppmw	parts per million by weight
PRA	Paperwork Reduction Act

psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief devices
PV	present value
RFA	Regulatory Flexibility Act
RTR	Risk and Technology Review
scmm	standard cubic meters per minute
SO_2	sulfur dioxide
THF	tetrahydrofuran
TOC	total organic compound
tpy	tons per year
TRE	total resource effectiveness
$\mu g/m^3$	micrograms per cubic meter
UMRA	Unfunded Mandates Reform Act
U.S.C.	United States Code
VCS	voluntary consensus standards
VOC	volatile organic compound(s)

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I. General Information

A. Executive Summary

The EPA promulgated the PEPO NESHAP on June 1, 1999, and codified the NESHAP at 40 CFR part 63, subpart PPP.[1] In 2014, the EPA finalized a technology review and residual risk review ("RTR") for the PEPO NESHAP under the provisions of CAA sections 112(d)(6) and (f)(2);[2] subsequently, the EPA agreed to reconsider two aspects of the 2014 rulemaking in response to a petition for reconsideration. Through these actions, the Agency addressed its statutory obligations to promulgate MACT standards under CAA section 112(d)(2)-(3), conduct a residual risk review within eight years of promulgating the MACT standards under CAA section 112(f)(2), and conduct the first technology review (which must occur going forward every eight years) under CAA section 112(d)(6). The Agency concluded in 2014 that further amendments were not required under the RTR but took the opportunity in the 2014 rulemaking to make certain other amendments to the NESHAP.

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[1] 64 FR 29420 (June 1, 1999).
[2] 79 FR 17340 (Mar. 27, 2014).

On December 27, 2024, in connection with a consent decree obligation related to the ongoing technology review requirement in CAA section 112(d)(6), the EPA proposed revisions to the PEPO NESHAP based on the second technology review and reconsideration issues stemming from the 2014 rule. Although the Agency had already completed the residual risk review for this source category in the 2014 RTR, the EPA also proposed a second, "discretionary" residual risk review and certain amendments based on the results of the proposed review.[3] Sections II.B.3 and 4 of this preamble describe other revisions that the EPA proposed for the PEPO NESHAP.

In this action, the EPA is finalizing decisions and revisions for the PEPO NESHAP. The EPA summarizes and responds to the more significant public comments on the proposed rule within this preamble.[4] Following the 81-day comment period, the EPA conducted listening sessions with representatives of PEPO production facilities' owners and operators through meetings with the American Chemistry Council, American Fuel and Petrochemical Manufacturers, and Huntsman Corporation.[5] Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, the EPA offered government-to-government consultation with Tribes in December 2024.

Specifically, after reviewing public input and considering the issues further, the EPA agrees with public comments that, instead of finalizing a second, "discretionary" residual risk review and EtO-specific standards based on that review, it is more appropriate to evaluate EtO-specific standards under the CAA section 112(d)(6)

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[3] 89 FR 105986 (Dec. 27, 2024).

[4] A summary of all other public comments on the proposal and the EPA's responses to those comments is available in the document *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, Docket ID No. EPA-HQ-OAR-2023-0282.

[5] Additional details about these meetings are in the documents titled *Documentation of May 2025 Meetings With Industry Stakeholders*, *Documentation of Meetings With Industry Stakeholders - June through September*, and *Documentation of Meetings With Industry Stakeholders - December 2025 through February 2026*, Docket ID EPA-HQ-OAR-2023-0282.

requirement to conduct periodic technology reviews and revise standards "as necessary." The EPA is finalizing the proposed EtO-specific standards (with revisions) for process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater under CAA section 112(d)(6) rather than CAA section 112(f)(2). This pathway satisfies the EPA's obligations under the statute and the applicable consent decree, provides additional protections for public health, and reflects the typical approach the Agency has taken to revising standards after completion of the RTR. To note, the EPA is not finalizing the proposed fenceline monitoring work practice standard and the proposed revision to the continuous process vent standard. Otherwise, the EPA is finalizing provisions as proposed, with some clarifying changes and technical corrections. A "track changes" version of the regulatory language that incorporates the changes in this action is available in the docket.

B. Does this action apply to me?

Regulated entities. Table 1 of this preamble lists categories and entities potentially regulated by this action.

Table 1—NESHAP and Industrial Source Categories Affected by This Final Action

NESHAP and Source Category	NAICS[1] Code
40 CFR part 63, subpart PPP, PEPO Production	325199

[1] North American Industry Classification System (NAICS).

Table 1 of this preamble, although not exhaustive, provides 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.

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

1. NESHAP

The statutory authority for this final action is provided by CAA section 112, as amended (42 U.S.C. 7412). CAA section 112 establishes a two-stage regulatory process to develop standards for emissions of hazardous air pollutant(s) (HAPs) from stationary sources. In the first stage, the EPA promulgates technology-based standards under CAA section 112(d) for categories of sources identified as emitting one or more of the HAP listed in CAA section 112(b). "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.[6] For major sources, these standards are commonly referred to as MACT standards; CAA section 112(d)(2) provides that these 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.

CAA section 112(d)(3) establishes a minimum control level for MACT standards, known as the MACT "floor," based on emission controls achieved in practice by the best performing sources. 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 floors for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-

[6] 42 U.S.C. 7412(a)(1).

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). The EPA also considers control options that are more stringent than the floor and may establish standards more stringent than the floor, based on the consideration of the cost of achieving the emissions reductions, any non-air quality health and environmental impacts, and energy requirements.[7] Standards more stringent than the floor are commonly referred to as "beyond-the-floor" standards.

In the second stage of the regulatory process, the CAA requires the EPA to undertake two different analyses, which the Agency refers to as the technology review and the residual risk review. Under the technology review, the EPA 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 eight years, pursuant to CAA section 112(d)(6). In conducting this review, the EPA is not required to recalculate the MACT floors that were established in earlier rulemakings.[8] The EPA may consider cost in deciding whether to revise the standards pursuant to CAA section 112(d)(6).[9] Pursuant to the D.C. Circuit's decision in *Louisiana Environmental Action Network (LEAN) v. EPA*,[10] the EPA also reviews available data to determine if there are unregulated emissions of HAP within the source category and evaluate these data for use in developing new emission standards. Under the residual risk review, pursuant to CAA section 112(f), the EPA must within eight years of promulgating the technology-based standards for a source category 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

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[7] *Id.* 7412(d)(2).
[8] *Ass'n of Battery Recyclers, Inc. v. EPA*, 716 F.3d 667 (D.C. Cir. 2013); *Natural Resources Defense Council (NRDC) v. EPA*, 529 F.3d 1077, 1084 (D.C. Cir. 2008).
[9] 42 U.S.C. 7412(d)(2), (6); *Ass'n of Battery Recyclers*, 716 F.3d at 673-74.
[10] 955 F.3d 1088 (D.C. Cir. 2020).

prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.

In the proposal published on December 27, 2024, the EPA conducted a review that included both a technology review, required by CAA section 112(d)(6), and a second residual risk review, which the Agency claimed was allowed but not required under CAA section 112(f)(2).[11] Notably, the EPA's practice prior to 2024 had not involved conducting second, "discretionary" risk reviews or promulgating additional standards based on such a second review when the RTR had already been completed. As discussed below, the EPA is not finalizing the proposed residual risk review in this action and is instead finalizing EtO-specific standards under CAA section 112(d)(6), which authorizes the Agency to revise standards "as necessary."[12]

2. Petition for Reconsideration

In addition to amendments promulgated under CAA section 112(d)(6), this final action includes the EPA's response to issues raised in an administrative petition submitted pursuant to CAA section 307(d)(7)(B) on certain aspects of the 2014 review of the PEPO NESHAP. In May 2014, the EPA received a petition for reconsideration of the PEPO NESHAP (40 CFR part 63, subpart PPP), Pesticide Active Ingredient Production NESHAP (40 CFR part 63, subpart MMM), and Group IV Polymers and Resins NESHAP (40 CFR part 63, subpart JJJ) pursuant to CAA section 307(d)(7)(B) from the Louisiana Environmental Action Network, Ohio Valley Environmental Coalition, and Sierra Club, collectively.[13] For the PEPO NESHAP, the petitioners requested that the EPA: (1) remove the affirmative defense provisions from the rules in light of the judicial

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[11] 89 FR 105986 (Dec. 27, 2024).

[12] *See* section IV.A.4 of this preamble for more information.

[13] A copy of the petition and subsequent EPA correspondence granting reconsideration are in the docket for this rulemaking; *see* Document ID No. EPA-HQ-OAR-2023-0282-0044.

opinion in *NRDC v. EPA*[14]; (2) provide adequate opportunity to comment on the requirements associated with emissions from pressure relief devices (PRDs) (including associated compliance dates, the EPA's decision to not specifically require electronic indicators and alarms to monitor PRD releases to the atmosphere, and the standard's applicability to PRDs in organic HAP service versus PRDs in total HAP service); (3) redo the risk assessment using updated emission factors; (4) set additional monitoring requirements for flares to reduce flaring emissions; (5) set fenceline monitoring requirements; (6) reconsider its decision not to set standards that account for developments in leak detection and repair (LDAR); and (7) use existing regulatory authority to strengthen chemical facility safety and prevent accidents in accordance with the U.S. Chemical Safety and Hazard Investigation Board and Executive Order 13650. On August 26, 2014, the EPA sent a letter to the petitioners informing them that the EPA was granting their request for reconsideration on issues (1) and (2).[15] In the letter, the EPA also stated that it would initiate a notice-and-comment rulemaking on the issues for which the Agency granted reconsideration. The EPA addressed issue (1), the removal of affirmative defense provisions associated with the violation of air emission standards due to malfunctions, in a separate rulemaking; therefore, this final rule does not address that issue.[16] This action formally responds to the remaining issues concerning the PEPO NESHAP raised in the petition.[17]

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

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[14] 749 F.3d 1055 (D.C. Cir. 2014).

[15] A copy of the August 26, 2014, letter is in the docket for this rulemaking; *see* Document ID No. EPA-HQ-OAR-2023-0282-0045.

[16] 90 FR 42323 (Sept. 2, 2025).

[17] Although the issues identified in this paragraph (in addition to one other issue related to alternative compliance demonstration methods for periods of startup and shutdown) were also raised for 40 CFR part 63, subparts JJJ and MMM; this action does not respond to the reconsideration of these NESHAP, as the EPA is not reviewing those subparts in this action.

In addition to the docket, an electronic copy of this final action will 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/polyether-polyols-production-national-emission-standards-hazardous*. Following publication in the *Federal Register*, the EPA will post the *Federal Register* version and key technical documents at this same website.

Additional information is available on the Risk and Technology Review (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.

E. Judicial Review and Administrative Reconsideration

Under CAA section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. CAA section 307(b)(2) prohibits a party from challenging this final rule separately in any civil or criminal proceedings brought by the EPA for enforcement.

CAA section 307(d)(7)(B) further provides that only an objection to a rule or procedure that 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 **FOR FURTHER INFORMATION CONTACT** section of this preamble 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.

F. Severability

This final rule contains several discrete components, which the EPA views as severable as a practical matter—*i.e.*, they are functionally independent and will operate in practice independently of the other components. These discrete components are detailed in sections III.A through III.D of this preamble and the technical memoranda available in the docket. For example, the final requirements for equipment in organic HAP service, equipment in EtO service, flare operation and monitoring, transfer operations, and performance testing generally function independently of one another and would not be impacted if a reviewing court were to vacate one or more of the other final provisions. In addition, as this final rule revises an existing NESHAP, the EPA notes that if a reviewing court were to vacate one or more of the standards finalized here, the affected standards will revert to those present in the 2014 RTR final rule.

II. Background

A. What is the PEPO Production source category, and how does the NESHAP regulate HAP emissions from the source category?

The PEPO Production source category is the subject of this final action. The EPA promulgated the PEPO NESHAP on June 1, 1999, and codified the NESHAP at 40 CFR part 63, subpart PPP.[18] As promulgated in 1999 and further amended on July 1, 2004,[19] and March 27, 2014,[20] the PEPO NESHAP regulates HAP emissions from polyether

[18] 64 FR 29420 (June 1, 1999).
[19] 69 FR 39862 (July 1, 2004).
[20] 59 FR 17340 (Mar. 27, 2014).

polyol manufacturing process units (PMPUs)[21] that produce PEPO[22] as their primary product. A PMPU consists of purification systems, reactors and their associated product separators and recovery devices, distillation units and their associated distillate receivers and recovery devices, other associated unit operations, storage vessels, surge control vessels, bottoms receivers, product transfer racks, connected ducts and piping, and combustion, recovery, or recapture devices or systems. A PMPU also includes pumps, compressors, agitators, PRDs, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems.

Manufacturers use PEPO to make a variety of other products including lubricants, adhesives, sealants, cosmetics, pharmaceuticals, soaps, and feedstock for polyurethanes production. Urethane grade PEPO (*i.e.*, those that are free of water) serve as raw material in the production of polyurethanes, including slabstock and molded flexible foams, rigid foams, and other polyurethanes, including microcellular products, surface coatings, elastomers, fibers, adhesives, and sealants.

Facilities produce PEPO by polymerizing either epoxides (*i.e.*, a three-membered cyclic ether, such as EtO or propylene oxide) or tetrahydrofuran (THF). Facilities usually conduct the former process as a batch process and the latter as a continuous process. EtO and propylene oxide are both HAPs, but THF is not. In the original NESHAP, the EPA created two subcategories of PEPO based on the use of either epoxides or THF in polymerization.

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[21] A PMPU also includes flexible operation process units when an owner or operator cannot determine that a PEPO is not the primary product and a PEPO is produced or anticipated to be produced during time spans described in 40 CFR 63.1420(e)(2).

[22] PEPO are compounds formed through the polymerization of EtO or propylene oxide or other cyclic ethers with compounds having one or more reactive hydrogens (*i.e.*, a hydrogen atom bonded to nitrogen, oxygen, phosphorus, sulfur, etc.) to form polyethers (*i.e.*, compounds with two or more ether bonds). This definition of PEPO excludes cellulose ethers (such as methyl cellulose, carboxymethyl cellulose, hydroxyethyl cellulose, hydroxyethyl cellulose, and hydroxypropyl methyl cellulose) and materials regulated under the HON, such as glycols and glycol ethers.

The HAP emission sources at PEPO facilities include process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater. In the production of PEPO, facilities use HAP primarily as reactants or extraction solvents. HAP emitted from PEPO facilities include EtO, propylene oxide, toluene, methanol, and glycol ethers. The MACT standards for PEPO production include emission limits for process vents; a combination of equipment standards and work practices for storage vessels, wastewater, and equipment leaks; and work practice standards for heat exchange systems.

As of December 1, 2025, the EPA identified 23 PEPO facilities in operation that are subject to the PEPO NESHAP. The list of facilities in the United States that are part of the PEPO Production source category with processes subject to the PEPO NESHAP is in the document titled *List of Facilities Subject to the PEPO NESHAP, for Final Rule*, which is in the docket for this action.[23]

B. What changes did we propose for the PEPO Production source category in our December 27, 2024, proposal?

On September 18, 2023, the EPA received a complaint alleging that the Agency failed to undertake non-discretionary duties to conduct a technology review of the PEPO NESHAP at least every eight years, and on December 7, 2023, the plaintiffs amended the complaint to additionally allege that the Agency unreasonably delayed taking final agency action on reconsideration of the 2014 rule. As a result, on November 22, 2024, the EPA entered into a consent decree to take action on the reconsideration petition and the technology review of the PEPO NESHAP by December 10, 2025, later amended to March 13, 2026. The EPA's December 27, 2024, proposal addressed the Agency's statutory and consent decree obligation to conduct another technology review pursuant to CAA section 112(d)(6). However, the EPA also took the opportunity to conduct a second, "discretionary" residual risk review and proposed several standards based on the

[23] Docket ID No. EPA-HQ-OAR-2023-0282.

proposed results of that second review. This section explains what the EPA proposed with respect to the second, "discretionary" residual risk review, the mandatory eight-year technology review, and additional issues covered in the proposed rule.

1. Proposed Actions Related to CAA Section 112(f) Risk Assessment

The EPA proposed a second, "discretionary" residual risk review for the PEPO Production source category focused on emissions of EtO from PEPO sources. The EPA proposed control options for EtO under CAA section 112(f) to reduce risk from the PEPO Production source category as construed in the Agency's proposed findings. The EPA proposed under CAA section 112(f) to require additional control of EtO emissions from: (1) process vents, (2) storage vessels, (3) equipment leaks, (4) heat exchange systems, and (5) wastewater "in ethylene oxide service."[24]

- For process vents and storage vessels in EtO service, the EPA proposed that owners and operators reduce emissions of EtO by either: (1) venting emissions through a closed vent system to a non-flare control device that reduces EtO by greater than or equal to 99.9 percent by weight or to a concentration less than 1 parts per million by volume (ppmv) for each process vent and storage vessel, or (2) venting emissions through a closed vent system to a flare meeting new proposed operating and monitoring requirements for flares. For process vents, the EPA also proposed an annual limit of 5 pounds per year (lb/yr) or less for all combined process vents as an alternative to the percent control and concentration options.
- For equipment leaks in EtO service, the EPA proposed the following combined requirements: monitoring of connectors in gas/vapor and light liquid service at a leak definition of 100 ppmv on a monthly basis with no

[24] S*ee* 88 FR 25080 (Apr. 25, 2023) for the EPA's proposed definition of "in ethylene oxide service."

reduction in monitoring frequency and no delay of repair; monthly monitoring of light liquid pumps at a leak definition of 500 ppmv; and monthly monitoring of gas/vapor and light liquid valves at a leak definition of 100 ppmv with no reduction in monitoring frequency and no delay of repair.[25]

- For heat exchange systems in EtO service, the EPA proposed to require owners or operators to conduct more frequent leak monitoring (weekly instead of quarterly) and to repair leaks within 15 days from the sampling date (in lieu of the current 45-day repair requirement after receiving results of monitoring indicating a leak), and to not allow owners or operators to delay repairs.
- For wastewater in EtO service, the EPA proposed to revise the Group 1 wastewater stream threshold for sources to include wastewater streams in EtO service, and to prohibit owners and operators from injecting wastewater in EtO service into or disposing of water through any heat exchange system in a PMPU.

The EPA proposed that these requirements would reduce risk to an acceptable level for the PEPO Production source category and provide an ample margin of safety under the proposed approach to utilize CAA section 112(f)(2). We also proposed that no additional requirements were needed to prevent an adverse environmental effect.

2. Proposed Actions Related to CAA Section 112(d)(6) Technology Review

Pursuant to the CAA section 112(d)(6) technology review for the PEPO NESHAP, the EPA proposed that no revisions to the current standards beyond the fenceline monitoring work practice standard discussed later in this preamble are necessary for wastewater streams. However, the Agency proposed additional changes under CAA section 112(d)(6) for heat exchange systems, storage vessels, process vents,

[25] Leak definition refers to the concentration at or above which the equipment is considered leaking, and the owner or operator must repair the leaking equipment.

and equipment leaks. The EPA also proposed a fenceline monitoring work practice standard under CAA section 112(d)(6).

- For heat exchange systems at existing and new affected sources, the EPA proposed requirements that owners or operators conduct quarterly monitoring (after an initial six months of monthly monitoring if not already completed) using the Modified El Paso Method and a leak definition of 6.2 ppmv of total strippable hydrocarbon concentration (as methane) in the stripping gas.[26]
- For storage vessels at existing and new affected sources, the EPA proposed to revise applicability thresholds to require existing storage vessels between 38 cubic meters (m^3) (10,000 gal) and 151 m^3 (40,000 gal) with a vapor pressure ≥6.9 kilopascals (kPa) to add controls, and to require upgraded deck fittings and controls for guidepoles for all storage vessels equipped with an internal floating roof (IFR).
- For continuous process vents at existing and new affected sources associated with nonepoxide organic HAP (from making or modifying product) and process vents associated with existing and new affected sources that produce PEPO using THF, the EPA proposed to: (1) remove the total resource effectiveness (TRE) concept in its entirety; (2) remove 50 ppmv and 0.005 standard cubic meters per minute (scmm) Group 1 process vent thresholds associated with a PMPU using THF; and (3) redefine a Group 1 process vent (require control) as any process vent that emits ≥1.0 pounds per hour (lb/hr) of total organic HAP.
- For batch process vents at existing and new affected sources that are associated with the use of a nonepoxide organic HAP to make or modify the

[26] 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 analyzer.

product, the EPA proposed to change the PEPO NESHAP control threshold from 26,014 lb/yr to 10,000 lb/yr and remove the associated flow rate applicability thresholds.

- For equipment leaks at existing and new affected sources, the EPA proposed to revise the leak definition from 500 ppmv to 100 ppmv for valves that are in either gas/vapor service or light liquid service.
- For managing fugitive emissions, the EPA proposed a fenceline monitoring work practice standard requiring owners and operators to monitor EtO if their site uses, produces, stores, or emits EtO, and conduct a root cause analysis and corrective action upon exceeding an annual average EtO concentration action level of 0.2 micrograms per cubic meter ($\mu g/m^3$).

3. Proposed Actions Related to CAA Section 112(d)(2) and (3) and 112(h)

The EPA proposed other requirements for the PEPO NESHAP based on analyses performed pursuant to CAA section 112(d)(2) and (3) and 112(h) and to ensure that CAA section 112 standards apply continuously, as required by *Sierra Club v. EPA*.[27] These proposed requirements included:

- new monitoring and operational requirements for flares;
- regulatory provisions for vent control bypasses for closed vent systems containing bypass lines;
- work practice standards for startup and shutdown periods for maintenance vents and planned routine maintenance of storage vessels;
- new monitoring requirements for pressure vessels;
- new emission standards for surge control vessels and bottoms receivers;
- new emission standards for transfer operations;

[27] 551 F.3d 1019 (D.C. Cir. 2008).

- the addition of butylene oxide to the list of HAP presented in table 4 to 40 CFR 63, subpart PPP; and
- removal of exemption at 40 CFR 63.1420(d)(3) for certain processes currently excluded from the affected source as defined in 40 CFR 63.1420(a).

4. Other Proposed Actions

In addition to the actions described in sections II.B.1 through II.B.3 of this preamble, the EPA also proposed:

- to retain the existing PRD requirements in the PEPO NESHAP (in response to the Agency's reconsideration of issue (2) in the petition for reconsideration described in section I.C.2 of this preamble);
- to change the recordkeeping and reporting requirements to require the use of the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI) for performance test reports, flare management plans, and periodic reports;
- to require subsequent performance testing once every five years to demonstrate compliance with emission limits for certain process vents (if you route emissions to a control device other than a flare);
- to eliminate the option in 40 CFR 63.1427(a)(2)(ii) that exempts owners or operators using extended cookout (ECO) as a control technique from the requirement to directly measure the concentration of unreacted epoxide of some products when determining the batch cycle percent epoxide emission reduction; [28]

[28] ECO refers to extending the duration of the PEPO polymerization reaction to reduce the quantity of unreacted epoxides at the end of the reaction, thereby reducing epoxide emissions that would occur after opening the reactor. The PEPO NESHAP allows owners and operators to use ECO as a control technique to comply with the epoxide standard for process vents.

- to revise the phrasing in 40 CFR 63.1423(a) to refer to 40 CFR part 63, subpart F, where a definition in the PEPO NESHAP currently points to either 40 CFR part 63, subpart G or H;
- to add monitoring requirements for adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated offsite;
- to find that the inclusion of 1-bromopropane (1-BP) as an organic HAP will not have any effect on the MACT standards; and
- to make additional changes that address technical and editorial corrections for the PEPO NESHAP.

III. What is included in this final rule?

Upon further consideration of the issues and public comments received, the EPA is finalizing EtO-specific standards (similar to those proposed under CAA section 112(f)(2)) under CAA section 112(d)(6) and is not finalizing the proposed second residual risk review for the PEPO Production source category (see section III.A of this preamble). The EPA is also finalizing the Agency's determinations pursuant to the technology review provisions of CAA section 112(d) for the PEPO Production source category and amending the PEPO NESHAP in several respects based on those determinations.[29] In this action, the EPA is also finalizing other changes to the PEPO NESHAP, including amendments pursuant to CAA section 112(d)(2) and (3) and 112(h), described in sections III.C and III.D of this preamble. This action also reflects several changes to the December 27, 2024, proposal 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 second residual risk review for the PEPO Production source category?

[29] *See* section III.B of this preamble for a summary of requirements the EPA is finalizing for the PEPO NESHAP under the technology review.

As explained later in this preamble, after further consideration of the issues and public comments received, the EPA is not finalizing the proposed second, "discretionary" residual risk review for the PEPO Production source category.[30] Consequently, the EPA is not finalizing any standards under CAA section 112(f)(2), although the Agency is finalizing EtO-specific standards under CAA section 112(d)(6), which requires periodic technology reviews and authorizes the Agency to revise the NESHAP "as necessary." The EtO-specific standards being finalized under CAA section 112(d)(6) are discussed in the following sections.

B. What are the final rule amendments based on the technology review for the PEPO Production source category?

For heat exchange systems, the EPA determined that developments in practices, processes, and control technologies have occurred that warrant revisions to the MACT standards for heat exchange systems in the PEPO Production source category. Therefore, pursuant to CAA section 112(d)(6) and consistent with the proposed rule, the EPA is revising the MACT standards for the heat exchange systems.[31] These revisions will now require that owners and operators conduct quarterly monitoring for existing and new heat exchange systems (after an initial six months of monthly monitoring if not already completed) using 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.

The EPA is also finalizing, as proposed, a provision allowing owners and operators to use the current leak monitoring requirements for heat exchange systems at 40 CFR 63.104(b) in lieu of using the Modified El Paso Method, provided that 99 percent by weight or more of the organic compounds that could leak into the heat exchange system

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[30] *See* section IV.A of this preamble for additional details.

[31] *See* 40 CFR 63.1435(a), which references the Hazardous Organic NESHAP (HON) (*i.e.*, 40 CFR 63.104(g) through (j) and (l)) and accounts for differences between the HON and the PEPO NESHAP.

are both water soluble and have a Henry's Law Constant less than 5.0E-6 atmospheres-cubic meters/mol at 25 degrees Celsius. The EPA is also finalizing requirements under CAA section 112(d)(6) for heat exchange systems that emit EtO. For these heat exchange systems, the EPA is finalizing the term "in ethylene oxide service" at 40 CFR 63.1423(b) to mean any heat exchange system in a process that cools process fluids (liquid or gas) that are 1.0 percent or greater by weight of EtO. In addition, the EPA is finalizing a requirement to conduct monthly monitoring for leaks for heat exchange systems in EtO service using the Modified El Paso Method.[32] If an owner or operator finds a leak, the EPA is requiring repair of the leak to reduce the concentration or mass emissions rate below the applicable leak action level as soon as practicable but no later than 45 days after the owner or operator receives results of monitoring tests indicating a leak. The EPA is also not allowing delay of repair of leaks for more than 30 days if subsequent monitoring determines the presence of a total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv or higher.[33] Sections IV.B.2 through IV.B.4 of this preamble provide a more in-depth analysis of the decision to finalize additional requirements for heat exchange systems operating in EtO service, pursuant to CAA section 112(d)(6).

For storage vessels, the EPA determined that developments in practices, processes, and control technologies have occurred that warrant revisions to the MACT standards for storage vessels in the PEPO Production source category. Therefore, pursuant to CAA section 112(d)(6) and consistent with the proposed rule, the EPA is revising the MACT standards to change the Group 1 storage capacity criterion for storage vessels at new and existing sources, from the former range of 75 m^3 (inclusive) to 151 m^3

[32] *See* 40 CFR 63.1435(i), which references the HON and accounts for differences between the HON and the PEPO NESHAP.
[33] *See* 40 CFR 63.1435(i).

to the new range of 38 m^3 (inclusive) to 151 m^3,[34] and to require upgraded deck fittings and controls for guidepoles for all storage vessels equipped with an IFR, as already required in 40 CFR part 63, subpart WW.[35] The EPA is also finalizing requirements under CAA section 112(d)(6) for storage vessels that emit EtO. For these storage vessels, the EPA is finalizing, pursuant to CAA section 112(d)(6), the term "in ethylene oxide service" at 40 CFR 63.1423(b) to mean that the concentration of EtO in the stored liquid is greater than or equal to 1.0 percent by weight. The EPA is finalizing at 40 CFR 63.1432(s) a requirement—by reference to the Hazardous Organic NESHAP (HON) (*i.e.,* 40 CFR 63.119(a)(5)) and accounting for differences between the HON and the PEPO NESHAP—that PEPO storage vessels in EtO service reduce emissions of EtO by either: (1) venting emissions through a closed vent system to a non-flare control device that reduces EtO by at least 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 that the EPA is finalizing, as proposed, and discussed in section IV.C of this preamble.[36] Sections IV.B.2 through IV.B.4 later in this preamble provide a more in-depth analysis of decision to finalize additional requirements for storage vessels in EtO service pursuant to CAA section 112(d)(6).

For continuous process vent requirements, the final rule retains the use of the TRE index value concept and the current definition of a "Group 1 continuous process vent." This definition refers to a process vent from a continuous unit operation that is associated with the use of a nonepoxide organic HAP to make or modify the product and that has: (1) a flow rate greater than or equal to 0.005 scmm, (2) a total organic HAP concentration greater than or equal to 50 ppmv, and (3) a TRE index value less than or equal to 1.0.

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[34] *See* table 3 to 40 CFR part 63, subpart PPP.
[35] *See* 40 CFR 63.1432, which refers to the HON including 40 CFR 63.119(b)(5)(ix), (x), (xi), and (xii).
[36] *See* 40 CFR 63.1436.

However, for batch process vents, the EPA determined that there are developments in practices, processes, and control technologies that warrant revisions to the MACT standards for process vents in the PEPO Production source category. Therefore, pursuant to CAA section 112(d)(6), the EPA is revising the MACT standards, consistent with the proposed rule, to change the Group 1 combination of batch process vents threshold (for batch process vents that are associated with the use of a nonepoxide organic HAP to make or modify the product) from 26,014 lb/yr to 10,000 lb/yr and to remove the associated flow rate applicability threshold specified in the PEPO NESHAP at 40 CFR 63.1423(b). The EPA is also finalizing requirements under CAA section 112(d)(6) for process vents that emit EtO. For these process vents, the EPA is finalizing the term "in ethylene oxide service" at 40 CFR 63.1423(b) to mean each process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted EtO, and when combined, the sum of all these process vents within the process would emit uncontrolled EtO emissions greater than or equal to 100 lb/yr (45.4 kilograms per year, kg/yr). The EPA is finalizing at 40 CFR 63.1425(g) a requirement that PEPO process vents in EtO service reduce emissions of EtO by either: (1) venting emissions through a closed vent system to a non-flare control device that reduces EtO by at least 99.9 percent by weight, to a concentration less than 1 ppmv for each process vent, or to less than 100 lb/yr for all combined process vents within the process; or (2) routing emissions through a closed vent system to a flare meeting the flare operating requirements that the EPA is finalizing, as proposed and as discussed in section IV.C of this preamble.[37] Sections IV.B.2 through IV.B.4 of this preamble provide a more in-depth analysis of the decision to finalize requirements for process vents in EtO service pursuant to CAA section 112(d)(6).

[37] *See* 40 CFR 63.1436.

The EPA's proposed technology review for wastewater streams concluded that no developments in practices, processes, or control technologies warrant revisions to the MACT standards. However, this was because the Agency proposed stringent EtO-specific standards under CAA section 112(f)(2) and thus proposed to conclude that additional standards were not "necessary" under CAA section 112(d)(6). In response to comments recommending that the EPA evaluate the proposed EtO-specific standard for wastewater under CAA section 112(d)(6), the EPA is finalizing an EtO-specific standard for wastewater as "necessary" under CAA section 112(d)(6) rather than under CAA section 112(f)(2) as initially proposed.

Based on this evaluation, the EPA is finalizing additional requirements under CAA section 112(d)(6) for wastewater that contains, and thus emits, EtO. For these wastewater streams, the EPA is finalizing the term "in ethylene oxide service" at 40 CFR 63.1423(b) to mean any wastewater stream that contains a total annual average concentration of EtO greater than or equal to 10 parts per million by weight (ppmw) at any flow rate. The EPA is finalizing at 40 CFR 63.1433(s)(23) a requirement—by reference to the HON and accounting for differences between the HON and the PEPO NESHAP—that owners and operators reduce the concentration of EtO of each wastewater stream, by removal or destruction, to a level less than 1 ppmw, or comply with the Group 1 wastewater stream control requirements outlined in 40 CFR 63.138(d) or (e). Additionally, the EPA is finalizing an exemption to this requirement for wastewater streams in EtO service that cumulatively contain less than 1 megagram (approximately 1.1 tons) of EtO per year. Sections IV.B.2 through IV.B.4 of this preamble provide a more in-depth analysis of the decision to finalize requirements for wastewater in EtO service pursuant to CAA section 112(d)(6).

For equipment leaks, the EPA determined there are developments in practices, processes, and control technologies that warrant revisions to the MACT standards for

equipment leaks in the PEPO Production source category. Therefore, pursuant to CAA section 112(d)(6) and consistent with the proposed rule, the EPA is revising the MACT standards to use a leak definition of 100 ppmv for valves that are in either gas/vapor service or light liquid service.[38] The EPA is also finalizing requirements under CAA section 112(d)(6) for equipment that emits EtO via equipment leaks. For this equipment, the EPA is finalizing the term "in ethylene oxide service" at 40 CFR 63.1423(b) to mean any equipment that contains or contacts a fluid (liquid or gas) that is at least 1.0 percent by weight EtO. The EPA is finalizing at 40 CFR 63.1434(a)(3) requirements—by reference to the HON and accounting for differences between the HON and the PEPO NESHAP—for quarterly monitoring at a leak definition of 100 ppmv for connectors in gas and vapor service or in light liquid service in EtO service, monthly monitoring at a leak definition of 100 ppmv for valves in gas and vapor service or in light liquid service in EtO service, and monthly monitoring at a leak definition of 500 ppmv for pumps in light liquid service in EtO service. Additionally, the EPA is finalizing requirements for owners or operators to repair a detected leak as soon as practicable but no later than 15 days after collecting the sample, allowing delayed repair for a small amount of equipment in EtO service.[39] Sections IV.B.2 through IV.B.4 later in this preamble provide a more in-depth analysis of the decision to finalize additional requirements for equipment in EtO service pursuant to CAA section 112(d)(6).

Section III.E of this preamble provides a detailed discussion of the effective and compliance dates for the requirements the EPA is finalizing in this action for the PEPO NESHAP. Section IV.B.3 of this preamble provides a summary of key comments the EPA received on the proposed CAA section 112(d)(6) provisions and the Agency's

[38] *See* 40 CFR 63.1434(a)(6).
[39] *See* 40 CFR 63.1434(a)(3).

responses. Section IV.B.3 also explains the basis for the EPA's decision to finalize specific requirements for EtO emissions under CAA section 112(d)(6).

C. What are the final rule amendments we are taking pursuant to CAA section 112(d)(2) and (3) and 112(h) for the PEPO Production source category?

Consistent with *Sierra Club v. EPA*[40] and the proposed rule,[41] the EPA is revising monitoring and operational requirements for flares to ensure that PEPO flares meet MACT standards at all times when controlling HAP emissions.[42] In addition, the EPA is finalizing provisions and clarifications for bypass lines on closed vent systems.[43] The EPA is also finalizing work practice standards for certain activities where alternatives are appropriate, including:

- maintenance vents and equipment openings (excluding storage vessel degassing);[44]
- storage vessel degassing;[45] and
- planned routine maintenance for storage vessels.[46]

The EPA is also finalizing the proposed requirements for several other PEPO emission sources, including:

- pressure vessels;[47]
- surge control and bottoms receivers;[48]

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[40] 551 F.3d 1019 (D.C. Cir. 2008).
[41] 89 FR 105986 (Dec. 27, 2024).
[42] *See* 40 CFR 63.1436.
[43] *See* 40 CFR 63.1425(f), by references to 40 CFR 63.114(d)(2) and (3), 63.118(a)(5) and (f)(7), 40 CFR 63.1429(c)(3), and 40 CFR 63.1430(d)(6) and (h)(7).
[44] *See* 40 CFR 63.1425(f) by reference to 40 CFR 63.113(k) for process vents at PMPUs that produce PEPO products using THF, and 40 CFR 63.1425(h) for all other regulated PEPO process vents.
[45] *See* 40 CFR 63.1432(a), by reference to 40 CFR 63.119(a)(6).
[46] *See* 40 CFR 63.1432(a), by reference to 40 CFR 63.119(e)(7).
[47] *See* 40 CFR 63.1432(a), by reference to 40 CFR 63.119(a)(7).
[48] *See* 40 CFR 63.1434(a)(7).

- transfer racks;[49]
- process units using butylene oxide;[50] and
- affected source reactions or processing that occur after completion of epoxide polymerization and all catalyst removal steps, if any (which may include, but are not limited to, solvent removal, purification, drying, and solids handling operations).[51]

The EPA is finalizing the requirements with a few changes from the proposed rule, after considering comments the EPA received during the public comment period. In response to comments received on the proposed provisions for flares, the EPA is allowing the use of pressure-assisted multi-point flares as a control option, provided they meet certain operational and monitoring requirements. In response to comments received on the proposed provisions for affected source reactions or processing that occur after completion of epoxide polymerization and all catalyst removal steps, the EPA is including overlap provisions for owners and operators currently complying with the Miscellaneous Organic Chemical Manufacturing NESHAP (MON).

The comments and the EPA's specific responses to the items discussed earlier in this preamble are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking, and in section IV.C.3 of this preamble.

D. What other changes have we made to the NESHAP?

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[49] *See* 40 CFR 63.1434(i), which references the HON at 40 CFR 63.126 through 63.130 and accounts for difference between the HON and the PEPO NESHAP.
[50] *See* 40 CFR 63.1423(b) for the definition of "epoxide" and the list of HAP presented in table 4 to the PEPO NESHAP.
[51] *See* 40 CFR 63.1420(d)(3).

This rule also finalizes, as proposed, revisions to several other PEPO NESHAP requirements. This section describes these revisions, as well as other provisions that have changed since proposal.

To increase the ease and efficiency of data submittal and data accessibility, the EPA is finalizing, as proposed, a requirement that owners or operators submit electronic copies of continuous monitoring system performance evaluations,[52] flare management plans, Notification of Compliance Status reports, and periodic reports through the EPA's CDX using the CEDRI.[53] The PEPO NESHAP already requires electronic submittal of performance test results collected using test methods that are compatible with the EPA-provided software. In addition to the new electronic reporting requirements, the EPA is making minor updates to the electronic reporting language for performance tests that do not change the requirements but reflect the EPA's current electronic reporting process (*e.g.*, noting the required software and the system to which the reports are submitted). A description of the electronic data submission process is in the memorandum *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules*.[54] The final rule requires that owners and operators submit performance test results in the format generated through the use of the EPA's Electronic Reporting Tool (ERT) or an electronic file consistent with the XML schema on the ERT website.[55] Similarly, owners and operators must submit performance evaluation results of CEMS in the format generated through the use of the ERT or an electronic file consistent with the XML schema on the ERT website. For both performance test results and CEMS performance evaluation

[52] If a continuous emission monitoring system (CEMS) is used to continuously monitor the EtO concentration at the exit of an air pollution control device (APCD) as allowed at 40 CFR 63.1426(g) and 40 63.1432(s), by reference to 40 CFR 63.124.
[53] *See* 40 CFR 63.1436(b); and 40 CFR 63.1439(e)(5), (6), and (9).
[54] Document ID No. EPA-HQ-OAR-2023-0282-0016.
[55] https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert.

results, all the information required by 40 CFR 63.7(g)(2) in PDF format must accompany electronic files consistent with the XML schema on the ERT website.

For periodic reports, the final rule requires that owners or operators use the appropriate spreadsheet template to submit information to CEDRI. The EPA has made minor clarifying edits to the spreadsheet templates based on comments received during the public comment period. The final version of the template for these reports will be on the CEDRI website.[56] The final rule requires that owners or operators submit flare management plans as a PDF upload in CEDRI. For a more detailed discussion of these final amendments, see section III.E.2 of the proposal preamble, as well as sections IV.D and VI.C of this preamble.

The EPA is also finalizing at 40 CFR 63.1437(a), as proposed, performance testing once every five years to demonstrate compliance with emission limits for certain process vents that route emissions to a control device other than a flare. Specifically, the EPA is finalizing the removal of the design evaluation option at 40 CFR 63.1426(b)(6) and (7) and (f) and requiring ongoing performance tests for owners and operators using a combustion, recovery, or recapture device to comply with: an epoxide or organic HAP percent reduction efficiency requirement in 40 CFR 63.1425(b)(1)(i), (b)(2)(ii), (c)(1)(ii), (c)(3)(ii), or (d)(2); an epoxide concentration limitation in 40 CFR 63.1425(b)(1)(ii) or (b)(2)(iii); or an annual epoxide emission limitation in 40 CFR 63.1425(b)(1)(iii) or (b)(2)(iv).

The EPA is also finalizing, as proposed, the elimination of the option in 40 CFR 63.1427(a)(2)(ii) that exempts owners and operators using ECO as a control technique from the requirement to directly measure the concentration of unreacted epoxide for a representative product of each product class when determining the batch cycle percent epoxide emission reduction. However, based on comments received on the proposed

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

rulemaking, in the final rule the EPA is limiting the number of product classes requiring direct measurement.[57]

Also, the EPA is finalizing as proposed both the phrasing used in 40 CFR 63.1423(a) to refer to 40 CFR part 63, subpart F, in instances where a definition in the PEPO NESHAP points to either 40 CFR part 63, subpart G or H, and the clarifying revisions to 40 CFR 63.1423(b) to reference the correct HON citation for "continuous recorder," "maximum true vapor pressure," "residual," and "waste management unit." Additionally, the EPA is finalizing the proposed definition of "heat exchange system" at 40 CFR 63.1423(b) to mean 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 PMPU heat exchangers that are in organic HAP service and serviced by that cooling tower, and all water lines to and from these process unit heat exchangers. For once-through systems, the heat exchange system consists of all heat exchangers in an individual PMPU that are in organic HAP service 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. The EPA is also finalizing the proposed definition of "in organic HAP service" to include a heat exchange system, to be consistent with the use of "in organic HAP service" in the definition of "heat exchange system."

In addition, the EPA is finalizing requirements, as proposed, at 40 CFR 63.1429(a)(9) for owners or operators using adsorbers that cannot be regenerated or using

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[57] *See* 40 CFR 63.1427(a)(2)(iii).

regenerative adsorbers that are regenerated offsite to use dual (two or more) adsorbent beds in series and to 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. Lastly, the EPA is finalizing all the revisions that the Agency proposed for clarifying text and correcting typographical errors, grammatical errors, and cross-reference errors. The EPA discussed these editorial corrections and clarifications in section IV.E.7 of the proposal preamble. The EPA is also including several minor clarifying edits in the final rule based on comments received during the public comment period.

The comments and the EPA's specific responses to the items discussed in this section are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking, and section IV.D.3 of this preamble.

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

For all the requirements the EPA is finalizing under CAA section 112(d)(2), (3), and (6) and 112(h), all existing affected sources and all affected sources that were new sources under the previous PEPO NESHAP (*i.e.*, any source that commenced construction or reconstruction after September 4, 1997, and on or before December 27, 2024) must comply with all of the amendments no later than March 18, 2029, or upon startup, whichever is later. For existing sources, CAA section 112(i) provides that the compliance date for standards promulgated under section 112(d) shall be as expeditious as practicable, but no later than three years after the effective date of the standard.[58] The EPA agrees with commenters that owners and operators need at least three years to

[58] *Ass'n of Battery Recyclers*, 716 F.3d at 672 ("Section 112(i)(3)'s three-year maximum compliance period applies generally to any emission standard . . . promulgated under [section 112].").

implement the requirements the Agency is finalizing under CAA section 112(d)(2), (3), and (6).[59] For example, for process vents and storage vessels in EtO service, if an affected source has uncontrolled process vents or storage vessels that meet the definition of "in ethylene oxide service," owners or operators may need to install a new control system, such as a thermal oxidizer with piping, ductwork, etc. Owners or operators may require additional permits (*e.g.*, New Source Review and/or title V operating permit modifications) to install new emission control equipment. Moreover, owners and operators need at least three years to understand the final rule changes; revise site guidance and compliance programs; ensure operations can meet the standards during startup and shutdown; update operation, maintenance, and monitoring plans; upgrade emission capture and control systems; install new flare monitoring equipment; and install new process control systems. As provided in CAA section 112(i) and 5 U.S.C. 801(3), all new affected sources that commenced construction or reconstruction after December 27, 2024, must comply with all requirements under CAA section 112(d)(2), (3), (6), and 112(h) by **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, or upon startup, whichever is later. The EPA provided additional rationale for these compliance dates in the preamble to the proposed rule. The EPA is also finalizing provisions, as proposed, that provide 60 days after the publication date of the final rule (or upon startup, whichever is later) for owners or operators of affected sources to comply with the requirement to submit Notification of Compliance Status reports electronically. The EPA is finalizing provisions that provide 60 days after the publication date of the final rule for owners or operators of affected sources to comply with the requirement to submit the results of CEMS performance evaluations electronically. The EPA is also finalizing provisions, as proposed, that provide three years after the

[59] *See* section 7.0 of U.S. EPA, *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, in the docket for this rulemaking.

publication date of the final rule for owners or operators of affected sources to comply with the requirements to submit periodic reports and flare management plans electronically.

IV. What is the rationale for our final decisions and amendments for the PEPO Production source category?

For each issue, this section provides a description of what the EPA proposed and what the Agency is finalizing, the EPA's rationale for the final decisions and amendments, and a summary of key comments and responses. For all comments not discussed in this preamble, comment summaries and the EPA's responses are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking.

A. Second Residual Risk Review for the PEPO Production Source Category

1. What did we propose pursuant to CAA section 112(f) for the PEPO Production source category?

Although the EPA's statutory and consent decree obligations are limited to the technology review requirement in CAA section 112(d)(6) and reconsideration of specific 2014 RTR issues, the EPA proposed a second, "discretionary" residual risk review for the PEPO Production source category along with EtO-specific standards intended to reduce risk based on the proposed findings. In this proposed review, the EPA identified six facilities that emit EtO from process vents, storage vessels, equipment leaks, or wastewater and have estimated individual cancer risks greater than 100-in-1 million in nearby communities. Additionally, in the proposed review, the EPA noted that an allowable leak of EtO from a heat exchange system could contribute to individual cancer risks greater than 100-in-1 million. Thus, the EPA proposed control options under CAA section 112(f) to reduce EtO risk from the PEPO Production source category.

In connection with the proposed second residual risk review, the EPA proposed to require further control of EtO emissions from: (1) process vents, (2) storage vessels, (3) equipment leaks, (4) heat exchange systems, and (5) wastewater in EtO service. The proposed definitions for being in EtO service included:

- For process vents, the EPA proposed "in ethylene oxide service" to mean that when uncontrolled, each process vent contains a concentration of greater than or equal to 1 ppmv undiluted EtO, and when combined, the sum of all process vents within the process would emit uncontrolled EtO emissions greater than or equal to 5 lb/yr.
- For storage vessels of any capacity and vapor pressure, the EPA proposed "in ethylene oxide service" to mean that the concentration of EtO within the tank liquid is greater than or equal to 0.1 percent by weight.
- For equipment leaks, the EPA proposed "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 EtO.
- For heat exchange systems, the EPA proposed "in ethylene oxide service" to mean any heat exchange system in a process that cools process fluids (liquid or gas) that are 0.1 percent or greater by weight of EtO.
- For wastewater, the EPA proposed "in ethylene oxide service" to mean any wastewater stream that contains total annual average concentration of EtO greater than or equal to 1 ppmw at any flow rate.

For process vents and storage vessels in EtO service, the EPA proposed that owners and operators reduce emissions of EtO by either: (1) venting emissions through a closed vent system to a non-flare control device that reduces EtO by greater than or equal to 99.9 percent by weight or to a concentration less than 1 ppmv for each process vent and storage vessel, or (2) venting emissions through a closed vent system to a flare that

meets new proposed operating and monitoring requirements for flares. For process vents, the EPA also proposed an annual limit of 5 lb/yr or less for all combined process vents as an alternative to the percent control and concentration options. For equipment leaks in EtO service, the EPA proposed the following combined requirements: monitoring of connectors in gas/vapor and light liquid service at a leak definition of 100 ppmv on a monthly basis with no reduction in monitoring frequency and no delay of repair; monthly monitoring of light liquid pumps at a leak definition of 500 ppmv; and monthly monitoring of gas/vapor and light liquid valves at a leak definition of 100 ppmv with no reduction in monitoring frequency and no delay of repair. For heat exchange systems in EtO service, the EPA proposed to require owners or operators to conduct more frequent leak monitoring (weekly instead of quarterly) and to repair leaks within 15 days from the sampling date (in lieu of the current 45-day repair requirement after receiving results of monitoring indicating a leak), and to not allow owners or operators to delay repairs. For wastewater in EtO service, the EPA proposed to revise the Group 1 wastewater stream threshold for sources to include wastewater streams in EtO service and to prohibit owners and operators from injecting wastewater in EtO service into or disposing of water through any heat exchange system in a PMPU.

In all cases, the EPA proposed that if information exists that suggests EtO could be present in these processes, the emission source is considered to be in EtO service unless the owner or operator conducts the procedures specified in 40 CFR 63.109 to demonstrate that the emission source does not meet the definition of being in EtO service. The EPA proposed that examples of information that could suggest EtO is present in a process stream 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.

At the time of proposal and in the context of proposing to use CAA section 112(f)(2) for this purpose, the EPA found that these proposed requirements would reduce risk to an acceptable level and provide an ample margin of safety to protect public health, and no additional requirements were necessary to prevent an adverse environmental effect.

2. How did the risk review change for the PEPO Production source category?

In this final rule, the EPA is not finalizing the proposed second residual risk review for the PEPO Production source category and instead is assessing and finalizing EtO-specific standards pursuant to CAA section 112(d)(6). Consequently, the EPA is not finalizing the EtO-specific standards outlined in section IV.A.1 in this action under CAA section 112(f)(2).

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

The EPA received numerous comments in support of and in opposition to the Agency's proposed second residual risk review for the PEPO Production source category. As the EPA has decided to not finalize any components of the proposed second residual risk review for the PEPO Production source category, the Agency is not including in this final preamble any comment summaries or responses that are related to the proposed second residual risk review authority, methodology or findings. Instead, all these comments summaries are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry* in the docket for this rulemaking. This section provides a summary of and response to commenters' requests to consider evaluating EtO-specific standards under CAA section 112(d)(6) instead of CAA section 112(f)(2).

Comment: Regarding the decision to propose a second residual risk review under CAA section 112(f)(2), some commenters supported the risk review, but multiple commenters urged the EPA to consider regulatory alternatives that provide the EPA with

more flexibility. Commenters noted that the EtO-specific standards are driven by technology developments for emissions control devices and monitoring requirements and are thus aligned with the CAA section 112(d)(6) technology review. Commenters emphasized that the EPA should consider cost when setting EtO-specific standards. Commenters also stated that the EPA should allow facilities three years to comply with the new EtO-specific standards.

Specifically, multiple commenters suggested that the EPA consider evaluating EtO-specific standards (for process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater in EtO service) under CAA section 112(d)(6) instead of under CAA section 112(f)(2). For example, one commenter urged the EPA to "withdraw the risk-based portions of the proposal and repropose under the technology review provisions" and that "more reasonable actions could achieve meaningful reductions of E[t]O . . . while providing feasible reductions and protecting the supply chain."[60] The commenter also requested that the EPA promulgate cost-effective standards for equipment leaks under CAA section 112(d)(6) that will reduce emissions of both organic HAP and EtO. Another commenter stated that the EPA "should categorize and base the proposed ethylene oxide requirements for Process Vents, Storage Tanks, and Wastewater under Section 112(d) of the Clean Air Act instead of under the Section 112(f) residual risk requirements." The commenter continued, "In some cases, capital projects will have to be implemented to meet the new emission standards. The details of these requirements are largely developments in technology that require installing or revising air pollution control equipment for process vents or storage tanks and installing unit operations to remove ethylene oxide from process wastewater streams. These technologies will also require testing to confirm removal efficiency or outlet concentrations along with the establishment of operating parameters, and the continuous

[60] Comment ID No. EPA-HQ-OAR-2023-0282-0103.

monitoring of operating parameters. In some cases, the owner or operator will have to request approval of the operating parameters to monitor from regulatory agencies on a case-by-case basis. Taken together, these requirements align more with Section 112(d) of the Clean Air Act."[61]

Response: The EPA agrees with commenters that it is more appropriate to evaluate EtO-specific standards under CAA section 112(d)(6). CAA section 112(d)(6) provides that the EPA should consider cost in deciding whether to revise the standards and allows a maximum compliance timeline of three years (in contrast to the maximum of two years allowed by CAA section 112(f)(2)). While the EPA may have proposed EtO-specific standards under CAA section 112(f)(2), the proposal demonstrated that there are developments in practices, processes, and control technologies for reducing EtO emissions that merit evaluation under CAA section 112(d)(6). As explained in section IV.B.3 of this preamble, the EPA's evaluation under CAA section 112(d)(6) finds it appropriate to revise the PEPO NESHAP to include additional standards for EtO. The EPA also agrees that facilities would encounter significant difficulties complying with some of the proposed requirements within two years as required by CAA section 112(f)(2).

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

In 2014, the EPA finalized a residual RTR for the PEPO NESHAP under the provisions of CAA section 112(f)(2) and (d)(6).[62] In 2024, the EPA proposed a second residual risk review for the PEPO Production source category and proposed to address residual risks associated with EtO emissions from this source category, both pursuant to CAA section 112(f)(2). This was consistent with other recent approaches taken by the EPA to address EtO emissions from chemical manufacturing facilities such as the 2024

[61] Comment ID No. EPA-HQ-OAR-2023-0282-0099.
[62] 79 FR 17340 (Mar. 27, 2014).

rulemaking amending the HON.[63] The EPA is not finalizing the residual risk review or the risk-based standards proposed in 2024 pursuant to CAA section 112(f)(2). Several commenters requested that the EPA consider evaluating EtO-specific standards under CAA section 112(d)(6) instead of under CAA section 112(f)(2). The EPA agrees with these commenters that, in this circumstance, the technology review is the more appropriate authority to use to target EtO emissions. The EPA also notes that the consent decree requiring review of this NESHAP specifies that a technology review under CAA section 112(d)(6) must be completed, but it does not require a residual risk review under CAA section 112(f)(2). The EPA acknowledges that the evaluations conducted for the proposed CAA section 112(f)(2) review demonstrated that there are developments in practices, processes, or technology that can meaningfully reduce EtO emissions for the PEPO Production source category. Thus, in response to comments that the CAA section 112(d)(6) framework is more appropriate to analyze these options, the EPA is finalizing revisions that reflect those developments under the CAA section 112(d)(6) authority, which requires the Agency to consider factors such as cost, in lieu of finalizing the proposed CAA section 112(f)(2) review. See section IV.B.2 of this preamble for details regarding the EPA's CAA section 112(d)(6) review for reducing EtO emissions. The EPA notes that these finalized EtO-specific CAA section 112(d)(6) standards result in projected overall EtO emissions reductions from the PEPO source category similar to those reductions projected for the proposal. For all six facilities estimated in the proposed risk assessment to have baseline source category cancer risks greater than 100-in-1 million in nearby communities, the EPA estimates that the final rule will result in significant emissions reductions from baseline, which would lead to significant risk reductions compared to baseline. Revisions to the baseline EtO emissions estimate of one of the facilities have been incorporated into the EPA's final impact analysis. More

[63] *See* 89 FR 42932 (May 16, 2024), 2024 final rule amending the HON.

information about the estimated impacts of this final action is in the document titled *Updated Impact Calculations and Technology Review for the PEPO Production Source Category – Final Rule*, which is in the docket for this rulemaking.

B. Technology Review for the PEPO Production Source Category

1. What did we propose pursuant to CAA section 112(d)(6) for the PEPO Production source category?

Based on the EPA's technology review for the PEPO Production source category, the Agency proposed changes under CAA section 112(d)(6) to the PEPO NESHAP for heat exchange systems, storage vessels, process vents, and equipment leaks in organic HAP service. In addition, the EPA proposed no change under CAA section 112(d)(6) for wastewater streams in organic HAP service. The EPA also proposed fenceline monitoring requirements under CAA section 112(d)(6). This section provides a summary of the Agency's findings, as proposed in 2024.

a. Heat Exchange Systems

In the EPA's technology review for the PEPO Production source category, the Agency identified one development in practices and processes for PEPO heat exchange systems in organic HAP service—the use of the Modified El Paso Method for monitoring for leaks from heat exchange systems.[64] The EPA determined that this method is more effective in identifying leaks and measures a larger number of compounds than the previously required methods in the PEPO NESHAP. After evaluating state and Federal regulations requiring the Modified El Paso Method and emission data collected for the Ethylene Production RTR,[65] the EPA proposed pursuant to CAA section 112(d)(6) to

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[64] Texas Commission on Environmental Quality, Sampling Procedures Manual, Appendix P: *The Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound (VOC) Emissions from Water Sources* (included in EPA-HQ-OAR-2023-0282-0030) describes in the detail the Modified El Paso Method. Appendix P is included in the docket for this rulemaking.

[65] *See* section II.D of the proposal preamble and the Ethylene Production RTR rulemaking docket, Docket ID No. EPA-HQ-OAR-2017-0357.

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, the EPA proposed no changes to the monitoring frequency in the PEPO NESHAP for monitoring for leaks from heat exchange systems, which continues to be monthly monitoring in the first six months following startup of a source and quarterly monitoring thereafter. The EPA also proposed to require re-monitoring at the relevant monitoring location after repair of a leak to ensure the repair was successful. Further, the EPA 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 gallons per minute or less. Finally, the EPA proposed that owners and operators may use the current leak monitoring requirements for heat exchange systems at 40 CFR 63.104(b) in lieu of using the Modified El Paso Method, provided that 99 percent by weight or more of the organic compounds that could leak into the heat exchange system are water soluble and have a Henry's Law Constant less than 5.0E-6 atmospheres-cubic meters/mol at 25 degrees Celsius. See section IV.C.1 of the proposal preamble for a summary of the EPA's rationale for selecting the proposed leak method, leak definition, and limitation on delay of repairs, as well as the Agency's rationale for retaining the previous monitoring schedule.

For a detailed discussion of the EPA's findings, see the document titled *Clean Air Act Section 112(d)(6) Technology Review for Heat Exchange Systems Located in the PEPO Production Source Category that are Associated with Processes Subject to the PEPO NESHAP*.[66]

[66] Document ID No. EPA-HQ-OAR-2023-0282-0072.

b. Storage Vessels

In the EPA's technology review for the PEPO Production source category, the EPA identified three control options for further reducing emissions from PEPO storage vessels in organic HAP service. See section IV.C.2 of the proposal preamble for a summary of the three options. Based on the evaluation of the costs and emission reductions of each of the three options, the EPA proposed, pursuant to CAA section 112(d)(6), to: (1) revise the Group 1 PEPO storage vessel capacity and maximum true vapor pressure (MTVP) thresholds to reflect the HON existing source threshold, which requires existing storage vessels between 38 m^3 (inclusive) and 151 m^3 with a vapor pressure greater than or equal to 6.9 kPa to reduce emissions of organic HAP by 95 percent utilizing a closed vent system and control device, or to reduce organic HAP emissions by utilizing an IFR, an external floating roof, routing the emissions to a process or a fuel gas system, or vapor balancing; and (2) require upgraded deck fittings and controls for guidepoles for all storage vessels equipped with an IFR.[67]

For a detailed discussion of the EPA's findings, see the document titled *Clean Air Act Section 112(d)(6) Technology Review for Storage Vessels Located in the PEPO Production Source Category that are Associated with Processes Subject to the PEPO NESHAP*.[68]

c. Process Vents

The EPA's technology review for PEPO process vents in organic HAP service did not identify any control options associated with: (1) epoxide (*i.e.*, EtO, propylene oxide, butylene oxide, and epichlorohydrin) emissions resulting from the use of these chemicals as reactants or (2) emissions of nonepoxide organic HAP resulting from their use in

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[67] The EPA requires all openings in an IFR (except those for automatic bleeder vents (vacuum breaker vents), rim space vents, leg sleeves, and deck drains) to be equipped with a deck cover, and the deck cover is required to be equipped with a gasket between the cover and the deck.

[68] Document ID No. EPA-HQ-OAR-2023-0282-0065.

catalyst extraction. However, the EPA identified three emission reduction options as part of the Agency's technology review for continuous process vents associated with nonepoxide organic HAP from making or modifying product and process vents associated with affected sources that produce PEPO using THF. See section IV.C.3 of the proposal preamble for a summary of the three options. Based on the EPA's evaluation of the costs and emission reductions of each of the three options, the Agency proposed pursuant to CAA section 112(d)(6) to remove the TRE index value concept in its entirety from the PEPO NESHAP. The EPA also proposed, pursuant to CAA section 112(d)(6), to remove the 50 ppmv and 0.005 scmm thresholds from the Group 1 definition for continuous process vents associated with nonepoxide organic HAP and the Group 1 process vent applicability associated with a PMPU using THF and instead to require owners and operators of these process vents that emit greater than or equal to 1.0 lb/hr of total organic HAP to meet the current control standards in the PEPO NESHAP. In addition, the EPA identified one option for reducing emissions from the combination of batch process vents that are associated with the use of a nonepoxide organic HAP to make or modify the product. Consequently, the EPA proposed pursuant to CAA section 112(d)(6) to revise the PEPO NESHAP control threshold for these batch process vents from 26,014 lb/yr to 10,000 lb/yr and to remove the associated flow rate applicability thresholds (including the Group 1 process vent thresholds of annual organic HAP emissions mass flow rate, cutoff flow rate, and annual average batch vent flow rate from the definition of "Group 1 combination of batch process vents" specified in the PEPO NESHAP at 40 CFR 63.1423(b)).

For a detailed discussion of the EPA's findings, see the document titled *Clean Air Act Section 112(d)(6) Technology Review for Batch and Continuous Process Vents in the*

PEPO Production Source Category that are Associated with Processes Subject to the PEPO NESHAP.[69]

d. Equipment Leaks

In the EPA's technology review for the PEPO Production source category, the EPA identified three control options for further reducing emissions from leaks of equipment in organic HAP service at PEPO facilities. See section IV.C.5 of the proposal preamble for a summary of the three options. Based on the EPA's evaluation of the costs and emission reductions of each of the three options, the Agency proposed pursuant to CAA section 112(d)(6) to revise the PEPO NESHAP to use a leak definition of 100 ppmv for valves that are in either gas/vapor service or light liquid service.

For a detailed discussion of the EPA's findings, see the document titled *Clean Air Act Section 112(d)(6) Technology Review for Equipment Leaks Located in the PEPO Production Source Category that are Associated with Processes Subject to the PEPO NESHAP*.[70]

e. Fenceline Monitoring

In the EPA's technology review for the PEPO Production source category, the Agency proposed a fenceline monitoring standard requiring owners and operators to monitor for EtO if their affected source uses, produces, stores, or emits EtO and to conduct root cause analysis and corrective action if the affected source exceeds an annual average EtO concentration action level of 0.2 $\mu g/m^3$. For a detailed discussion of the EPA's findings, see the document titled *Clean Air Act Section 112(d)(6) Technology Review for Fenceline Monitoring Located at Facilities with PEPO Production Processes Subject to the PEPO NESHAP*.[71]

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[69] Document ID No. EPA-HQ-OAR-2023-0282-0070.
[70] Document ID No. EPA-HQ-OAR-2023-0282-0074.
[71] Document ID No. EPA-HQ-OAR-2023-0282-0056.

2. How did the technology review change for the PEPO Production source category?

Apart from the proposed requirements for continuous process vents and fenceline monitoring, the EPA is finalizing the results of the technology review pursuant to CAA section 112(d)(6) for the PEPO Production source category as proposed with two minor clarifications related to the heat exchange system and storage vessel provisions of the review. For continuous process vent requirements, the final rule retains the use of the TRE index value concept and the current definition of a "Group 1 continuous process vent."[72] This definition refers to a process vent from a continuous unit operation that is associated with the use of a nonepoxide organic HAP to make or modify the product and that has: (1) a flow rate greater than or equal to 0.005 scmm, (2) a total organic HAP concentration greater than or equal to 50 ppmv, and (3) a TRE index value less than or equal to 1.0. Additionally, the final rule excludes all elements of the proposed fenceline monitoring requirements. With regard to the heat exchange system portion of the EPA's proposed technology review, the EPA is clarifying that the PEPO NESHAP does not require owners and operators to monitor their regulated heat exchange systems using water sampling methods or a surrogate indicator (*i.e.*, comply with the provisions in either 40 CFR 63.104(b) or (c)) if the heat exchange system is monitored for leaks using the Modified El Paso Method (according to 40 CFR 63.104(g)). For the storage vessel portion of the EPA's proposed technology review, the Agency is allowing more time

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[72] The TRE index value is derived from the cost effectiveness associated with HAP control by a flare or thermal oxidation and is a function of vent stream flowrate, vent stream net heating value, hourly emissions, and a set of coefficients. The TRE index value was first introduced in an EPA document titled *Guideline Series for Control of Volatile Organic Compound (VOC) Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry (SOCMI)* (*see* EPA-450/3-84-015 (Dec. 1984)). The EPA incorporated the TRE concept into the original HON (*see* 59 FR 19468 (Apr. 22, 1994)) and the original PEPO NESHAP rulemaking (*see* 64 FR 29420 (June 1, 1999)). The TRE index value is used in 40 CFR 63, subpart G, and 40 CFR 63, subpart PPP, process vent regulations. The TRE index value can also trigger monitoring, recordkeeping, and reporting requirements. In general, continuous process vents with a TRE index value equal to or less than 1.0 require control.

(*i.e.*, either the next time the storage vessel is emptied and degassed, or no later than March 18, 2036) for owners and operators to install upgraded deck fittings and controls for guidepoles for all storage vessels equipped with an IFR. For more details regarding these changes to the EPA's technology review, see section IV.B.3 of this preamble.

Additionally, in this final action, the EPA has reevaluated control options under the authority of CAA section 112(d)(6) for process vents, storage vessels, equipment, heat exchange systems, and wastewater that emit EtO. As part of this review, the EPA considered relevant comments from the proposed CAA section 112(f)(2) analysis (which the Agency is not finalizing in this action) that could inform or support the Agency's current evaluation under CAA section 112(d)(6).[73] Based on this reassessment, the EPA is finalizing requirements for EtO-emitting sources that reflect a higher level of control than those being finalized under CAA section 112(d)(6) for the same types of sources in organic HAP service that do not emit EtO. Section III.B of this preamble describes the specific requirements for EtO emissions that the EPA is finalizing. Section IV.B.3 of this preamble explains the Agency's decision to finalize them under CAA section 112(d)(6).

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

The EPA received comments in support of and against the proposed technology review. The EPA only received minor comments requesting clarifications associated with the Agency's technology review for heat exchange systems, storage vessels, and wastewater in organic HAP service. Commenters argued that the Agency should not revise the leak definition for valves in gas/vapor or light liquid service from 500 to 100 ppmv and should instead re-open and reevaluate the MACT standards for new technologies for equipment leaks. The comments and the EPA's specific responses to

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[73] In the proposal, the EPA proposed stringent EtO-specific standards under CAA section 112(f)(2) and thus did not consider any additional standards necessary under CAA section 112(d)(6).

these issues are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking. Based on these comments, the EPA is finalizing revisions (along with the minor clarifications described in section IV.B.2 of this preamble) to require the Modified El Paso Method for heat exchange systems, and the EPA is finalizing revisions to the Group 1 PEPO storage vessel capacity and MTVP thresholds and a requirement for owners and operators to upgrade deck fittings and controls for guidepoles for all storage vessels equipped with an IFR. For equipment leaks, the EPA is finalizing, as proposed, a leak definition for valves in gas/vapor or light liquid service of 100 ppm. The EPA is finalizing the Agency's proposed determination that there are currently no cost-effective developments for the organic HAP standards for wastewater.

For continuous process vents in organic HAP service, the EPA received numerous comments opposing the EPA's proposal under the technology review to abandon the TRE index value concept in favor of a 1.0 lb/hr mass-limit threshold. The EPA also received several comments regarding the fenceline monitoring requirements that the Agency proposed under the technology review. This section provides summaries of and responses to the key comments received regarding: (1) the technology review amendments proposed for continuous process vents at existing and new affected sources associated with nonepoxide organic HAP (from making or modifying product) and process vents associated with existing and new affected sources that produce PEPO using THF and (2) the proposed fenceline monitoring requirements. Comment summaries and the EPA's responses for additional issues raised regarding the proposed requirements resulting from the technology review for the PEPO source category are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air*

Pollutants for Polyether Polyols Production Industry, which is in the docket for this rulemaking.

In addition, as stated previously in this preamble, several commenters requested that the EPA consider evaluating EtO-specific standards (for process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater in EtO service) under CAA section 112(d)(6) instead of under CAA section 112(f)(2). As such, the EPA has considered comments on the amendments proposed under CAA section 112(f)(2) that inform or support the Agency's current CAA section 112(d)(6) analysis. This section summarizes and responds to these comments, presenting the outcomes and decisions from the EPA's technology review of process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater in the PEPO Production source category that emit EtO.

a. Continuous Process Vents in Organic HAP Service

Comment: Commenters strongly opposed the EPA's proposal to abandon a longstanding compliance option in the PEPO NESHAP (*i.e.*, the TRE index value concept) for continuous process vents in organic HAP service in favor of a 1.0 lb/hr mass-limit threshold. Commenters provided many reasons for their opposition.

Commenters argued that removing the TRE index value concept from the PEPO NESHAP falls outside the Agency's technology review authority, since no significant control technology advancements had emerged since the 2014 PEPO NESHAP review to warrant eliminating the compliance mechanism.[74] These commenters pointed out that the EPA had already previously acknowledged that multiple process vents can be routed to a single APCD and old information is not a new development. The commenters also argued that neither a facility's voluntary control of its Group 2 process vents nor enforcement challenges justify eliminating the TRE index value concept from the PEPO NESHAP.

[74] 79 FR 17340 (Mar. 27, 2014).

Commenters claimed that the EPA's comparison of proposing to remove the TRE index value concept from the PEPO NESHAP to other NESHAP that omit the TRE index value concept was flawed from the outset. Commenters pointed out that during the Ethylene Production rulemaking, the EPA itself noted "relatively few process vents," making any Group 1 versus Group 2 distinction largely moot. They also emphasized that the EPA did not eliminate the TRE index value concept in its recent MON technology review, and the generic MACT standards under 40 CFR 63, subpart YY, continue to require TRE index value calculations for categories with multiple vent types, underscoring the TRE index value's ongoing regulatory relevance. Commenters also noted that while the HON recently removed the TRE index value, industry objected to the TRE index value's removal, in the form of comments and petitions, some of which are still outstanding. In addition, commenters stated that many facilities will still be required to comply with TRE-based determinations according to their title V operating permits and requirements under New Source Performance Standards 40 CFR 60, subparts NNN and RRR.

Commenters also contended that the EPA had leaned too heavily on one facility's CAA section 114 response (regarding the use of process simulations) to paint the TRE index value concept as unduly complex. The commenters asserted that many plants actually rely on direct source testing to generate inputs for calculating the TRE index value; this approach is not complex and avoids process simulation uncertainty altogether. Commenters emphasized that the EPA had provided no examples of cases in which verifying TRE index value calculations was challenging or thwarted accurate cost-effectiveness determinations, and commenters pointed out that both state and Federal programs routinely mandate intricate mathematical formulas without issue.

Additionally, regarding the EPA's determination that some facilities are voluntarily controlling continuous process vents that are not required by the NESHAP,

commenters highlighted that controlling Group 2 vents is often anything but voluntary. Commenters asserted that facilities control these types of emission streams to satisfy state or Federal regulations, preconstruction permit conditions (such as dispersion modeling or boilerplate requirements), Best Available Control Technology or Lowest Achievable Emission Rate reviews, safety protocols, or internal corporate standards. Commenters emphasized the comprehensive usefulness of the TRE index value, explaining that it accounts for both volumetric flow and net heating value to help identify and prioritize the most significant emission sources. Commenters referenced the 1994 HON preamble, in which the EPA supported the TRE index value concept as an effective method for capturing all relevant factors that influence emission rates.[75]

Commenters also argued that requiring owners and operators to route low-emission, low-heating-value Group 2 streams to an emission control device would produce negligible HAP reductions but would generate carbon monoxide (CO), nitrogen oxides (NO_X), and carbon dioxide (CO_2) and require significant supplemental fuel.

Finally, commenters noted that although the EPA recognized that the cost effectiveness of replacing the TRE index value with a 1.0 lb/hr mass-limit threshold is nearly the same as raising the TRE index value threshold to 5.0 (corresponding to proposed Control Options 1 and 3), the rationale behind selecting Control Option 3 was flawed for the reasons previously outlined. Consequently, commenters urged the EPA not to eliminate the TRE index value concept altogether. Also, some commenters argued that the EPA has the authority to raise the TRE index value threshold to a value that represents cost-effective control for PEPO vents; however, they argued, the EPA's impacts analysis for raising the threshold to a TRE index value of 5.0 overstated emissions reductions and underestimated costs. Other commenters suggested that the TRE index value threshold should remain at 1.0.

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[75] 59 FR 19127 (Apr. 22, 1994).

Response: After careful consideration of commenter feedback and technical analysis, the EPA is not finalizing the Agency's proposal to eliminate the TRE index value concept in the PEPO NESHAP for continuous process vents associated with nonepoxide organic HAP from making or modifying product and process vents associated with affected sources that produce PEPO using THF, and the EPA is not removing the 50 ppmv concentration and 0.005 scmm flow rate thresholds that define a "Group 1 continuous process vent." As a result, the EPA also is not adopting the proposed redefinition of a "Group 1 continuous process vent" as any vent emitting greater than or equal to 1.0 lb/hr of total organic HAP. Instead, the final rule retains the TRE index value concept as well as the current definition of a "Group 1 continuous process vent" as a process vent from a continuous unit operation that is associated with the use of a nonepoxide organic HAP to make or modify the product and that has: (1) a flow rate greater than or equal to 0.005 scmm, (2) a total organic HAP concentration greater than or equal to 50 ppmv, and (3) a TRE index value less than or equal to 1.0.

In the EPA's proposal to evaluate the potential impacts of eliminating the TRE index value concept from the PEPO NESHAP (as well as the Agency's proposed evaluation of impacts for retaining the TRE index value concept and the 50 ppmv and 0.005 scmm Group 1 process vent thresholds but increasing the TRE index value threshold from 1.0 to 5.0), the EPA relied on data from approximately 50 continuous process vents designated as Group 2, submitted by nine of the 13 HON facilities that responded to the Agency's CAA section 114 information request. At the time, the EPA believed that this dataset served as a reasonable proxy, given the structural and operational similarities between PMPU continuous process vents regulated under the PEPO NESHAP and continuous process vents regulated under the HON. Upon further review and in light of public comments, the EPA now has determined that it is not appropriate to extrapolate impacts for PEPO continuous process vents based on HON

data (*e.g.*, for evaluating the elimination of the TRE index value concept in the PEPO NESHAP or for evaluating a change to the TRE index value threshold in the PEPO NESHAP). In other words, the EPA has determined that the Agency's dataset is too limited to finalize this change. While the two source categories share certain characteristics, there are important distinctions in process design, emission profiles, and control strategies that limit the applicability of HON data to PEPO operations. For example, HON sources tend to operate under more uniform continuous processing conditions (which is what the TRE index value applies to), whereas PEPO Production sources mostly operate in batch processing conditions (and thus most PEPO process vents would not be subject to the continuous process vent standards) and exhibit greater variability in vent characteristics due to differences in product formulations and raw material usage. Although processes using THF to produce PEPO are generally continuous, the EPA is not aware of any facilities currently using THF. Moreover, facilities collected the HON Group 2 process vent data under a specific regulatory context, and that data may not reflect the full range of operating conditions or emission behaviors present in PMPUs. Using this data to model the effects of removing or changing the TRE index value with regard to the PEPO NESHAP could result in misleading conclusions, potentially underestimating or overestimating the environmental and compliance impacts for affected PEPO sources. Given these uncertainties and the lack of PEPO-specific data for continuous vents to support a robust analysis, the EPA has concluded that it would be unreasonable to finalize the proposed changes for continuous vents and revising the TRE index value for PEPO Production sources based on HON-derived information.

b. Fenceline Monitoring

Comment: Commenters supported and opposed the proposed fenceline monitoring requirements for PEPO facilities that use, produce, store, or emit EtO. Commenters in

support of fenceline monitoring stated that fenceline monitoring is a development and key practice in the detection and reduction of hard-to-characterize sources of emissions. These commenters also emphasized that they have repeatedly advocated for the application of fenceline monitoring to reduce emissions that impact surrounding communities. Many commenters opposed the use of fenceline monitoring and argued that fenceline monitoring was not a development in practice, process, or control technology and that the EPA exceeded its authority under CAA section 112(d)(6). Commenters argued that LDAR provisions already regulate fugitive emissions, the EPA did not show emissions reductions due to fenceline monitoring in the proposal, and CAA section 112(d)(6) does not authorize the EPA to impose standards to reduce uncertainty in emissions estimates. A commenter also expressed concern with the excessive annual cost of conducting canister sampling of EtO.

Response: In response to public comments and further evaluation, the EPA is not finalizing a fenceline monitoring program for the PEPO Production source category at this time. The EPA disagrees with commenters' assertion that CAA section 112(d)(6) does not authorize the proposed fenceline monitoring work practice standard. However, many commenters raised concerns about the uncertainties and implementation challenges associated with applying fenceline monitoring requirements to PEPO facilities. These concerns suggest that the EPA needs to conduct further analysis before establishing such standards, and the EPA is deferring action until the Agency better understands those issues.

Historically, the EPA has elected to not implement fenceline monitoring for other chemical sector source categories when fugitive emission standards were sufficiently stringent or when the EPA expected other finalized provisions to enhance control or

oversight of those emissions.[76] In the proposal, the EPA acknowledged discrepancies between expected and measured EtO concentrations, based on fenceline monitoring conducted for the Agency's 2022 CAA section 114 request. While the results of this monitoring initially suggested a need for further scrutiny of fugitive emissions, the EPA recognizes that this data was limited to a short period of time at eight PEPO facilities, including only two facilities that did not also have HON sources emitting EtO, and thus might not be representative of their annual emissions, especially considering the episodic nature of batch process emissions associated with PEPO facilities. In this action, the EPA is also finalizing strengthened EtO standards, as outlined in sections IV.B.3.c through IV.B.3.f of this preamble. These updates include improved controls for fugitive emissions from various emission sources such as equipment leaks, storage vessels, wastewater, and heat exchange systems. The EPA expects these enhancements to substantially reduce fugitive emissions of EtO (and other commingled HAP) from PEPO facilities. In light of these changes, the Agency has determined that it needs further data to assess the overall impact of the revised standards on fugitive emissions across the source category. The EPA notes that the Agency retains the authority under CAA section 112(d)(6) to reevaluate the necessity for fenceline monitoring and associated work practices, once the Agency better understands the impacts of the revised standards.

Finally, the EPA agrees with commenters that the projected annual cost of a fenceline monitoring program for PEPO facilities (nearly $4.5 million) is not justified without a clearer understanding of the benefits such monitoring would provide. The Agency remains committed to ensuring effective and efficient regulation and will

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[76] *See* U.S. EPA, Summary of Public Comments and Responses for the Risk and Technology Review for Ethylene Production, Document ID No. EPA-HQ-OAR-2017-0357-0074 (Mar. 2020); U.S. EPA, Summary of Public Comments and Responses for the Risk and Technology Review for Miscellaneous Organic Chemical Manufacturing, Document ID No. EPA-HQ-OAR-2018-0746-0200 (May 2020).

continue to assess the appropriateness of fenceline monitoring as new data become available.

Since the Agency is not finalizing a fenceline monitoring program for the PEPO Production source category, the EPA is not responding to comments related to the details of the proposed fenceline monitoring program. However, summaries of all these comments are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking.

c. Process Vents and Storage Vessels in EtO Service

Comment: As previously mentioned in this preamble, several commenters requested that the EPA consider evaluating EtO-specific standards under CAA section 112(d)(6) instead of under CAA section 112(f)(2). Commenters broadly urged the EPA to prioritize meaningful reductions in EtO emissions while avoiding excessive compliance costs. More specifically, they called on the EPA to reassess the proposed 1 ppmv threshold used to define "in ethylene oxide service" for process vents emitting EtO, as well as to reassess the proposed 0.1 weight percent threshold applied to storage vessels emitting EtO. One commenter recommended that the EPA allow owners and operators to determine whether a storage vessel qualifies as "in ethylene oxide service" based on its annual average EtO concentration, consistent with the approach used for equipment leaks that emit EtO. A commenter also proposed expanding the alternative method outlined in 40 CFR 63.109(b)(2) (which allows calculation of EtO concentration when fluid-specific data is available) to include good engineering judgment and process knowledge. Additionally, the commenter requested that owners and operators be permitted to revise a storage vessel's EtO service status by documenting changes in process or raw materials that eliminate EtO service conditions.

Response: The EPA is not finalizing standards under CAA section 112(f)(2) as part of this rulemaking. For more information on this decision, see section IV.A.4 of this preamble. Instead, as requested by commenters, the EPA has reevaluated control options for process vents and storage vessels in EtO service under CAA section 112(d)(6), which requires the EPA to take into account any "developments in practices, processes, or control technologies" and to consider factors such as cost.[77]

Under this framework, the EPA reassessed the proposed EtO-specific standard for process vents and storage vessels. For process vents, the EPA proposed to define "in ethylene oxide service" as any vent within a process that, when uncontrolled, contains a concentration of undiluted EtO at or above 1 ppmv, and when combined, the sum of all these process vents within the process would emit uncontrolled EtO emissions greater than or equal to 5 lb/yr, or 2.27 kg/yr. The EPA proposed that facilities could achieve compliance for process vents "in ethylene oxide service" by reducing EtO emissions by 99.9 percent by weight, controlling the EtO concentration to below 1 ppmv, routing emissions to a flare, or ensuring that total EtO emissions from all vents in the process fall below the 5 lb/yr threshold. For storage vessels, the EPA proposed to define "in ethylene oxide service" for storage vessels to mean that the concentration of EtO in the stored liquid is at least 0.1 percent by weight. The EPA proposed that facilities could achieve compliance for storage vessels "in ethylene oxide service" by reducing EtO emissions by 99.9 percent by weight, controlling the EtO concentration to below 1 ppmv, or routing emissions to a flare.

The EPA considers these compliance options for process vents and storage vessels to represent Control Option 1 under CAA section 112(d)(6), and the Agency finds Control Option 1 feasible for PEPO sources. Commenters indicated that achieving 99.9

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[77] *See* section III.C of the proposal preamble for information on how the Agency conducts technology reviews.

percent destruction efficiency is possible using the ECO control technique, and the EPA is aware of multiple chemical facilities, including PEPO facilities, already achieving 99.9 percent control efficiency using a thermal oxidizer or other method. For decades, chemical facilities have used flares to control HAP emissions and to handle emissions from a wide variety of emission sources. Because achieving 99.9 percent destruction efficiency can result in very low EtO emissions that are not measurable, thus making the percent destruction efficiency difficult or impossible to quantify, this option includes an alternative 1 ppm standard to demonstrate compliance. Reducing EtO in the streams to 1 ppmv represents the lower end of measurable emissions. However, the EPA understands that changing the process vent definition (to include any gaseous streams "in ethylene oxide service") will require control of vents that currently are not routed to controls before release to the atmosphere. Retrofitting some of these vents could be difficult, requiring installation of different piping and additional equipment such as gas movers to successfully route low-flow or intermittent streams. While commenters recommended looking at changing the proposed concentration threshold for process vents "in ethylene oxide service," the EPA finds that concentrations can vary and may not correlate well with overall emissions from the vent stream. From stack testing information submitted in response to the EPA's CAA section 114 request, the Agency identified two vacuum jet process vents at one unit that have intermittent flows of less than 25 minutes per batch. Assuming batches are completed every 10 hours, the EPA estimated that these process vents emit 48 lb/yr combined. The EPA additionally assumed that two additional process vents in the PMPU would also be low-flow or intermittent streams, *e.g.*, from certain surge control vessels. Therefore, to avoid technical and implementation challenges associated with capturing very small amounts of EtO emissions from process vents, the EPA identified a second control option, which mirrors the proposed option except that it raises the threshold of "in ethylene oxide service" from 5 lb/yr to 100 lb/yr of combined

uncontrolled EtO emissions, and it changes the control option from 5 lb/yr to 100 lb/yr of combined controlled and uncontrolled EtO emissions. Similarly, for storage vessels, the EPA understands that there could be storage vessels storing PEPO products with low levels of unreacted EtO, so Control Option 2 also raises the percent by weight threshold in the definition of "in ethylene oxide service" from 0.1 percent by weight to 1 percent by weight to address this concern.

To assess the impacts of the two control options, the EPA updated the Agency's proposal analysis. The EPA relied on data from the 2017 National Emissions Inventory (NEI) and identified 11 PEPO facilities with processes that emit EtO from process vents and/or storage vessels. In addition to the NEI, the EPA incorporated information from several other sources, including stack test results submitted in response to the Agency's CAA section 114 request, full questionnaire responses from each facility, and relevant air permits. The EPA acknowledges that a commenter recommended applying the percent-by-weight threshold on an annual average basis. However, because the commenter provided no rationale or supporting explanation, the EPA did not include this suggestion in the Agency's analysis. Additionally, the EPA notes that demonstrating compliance with an annual average would likely require continuous sampling of materials, which could impose significant operational and resource burdens on facilities.

Based on this comprehensive dataset, the EPA estimated that Control Option 1 would affect nine PEPO facilities, while Control Option 2 would impact seven PEPO facilities. For each of these facilities, the EPA calculated the cost of installing a new recuperative thermal oxidizer with 70 percent energy recovery, using the methodology outlined in the EPA Control Cost Manual.[78] The EPA used a total capital investment estimate of $1,000,000, a value that commenters provided during the HON rulemaking.[79]

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[78] U.S. EPA, 2002. EPA Control Cost Manual (6th ed. Jan. 2002) (EPA/452/B-02-001).
[79] *See* 89 FR 42932 (May 16, 2024).

For the final rule, the EPA's impact analysis was revised to reflect 2024 dollars and an interest rate of 7.5 percent over a 20-year period in the capital recovery factor for thermal oxidizers. See the document titled *Updated Impact Calculations and Technology Review for the PEPO Production Source Category – Final Rule*, which is in the docket for this rulemaking, for details on the assumptions and methodologies used in this analysis.

Table 2 of this preamble presents the nationwide impacts for the two control options considered for the final rule for process vents and storage vessels in EtO service.

Table 2—Nationwide Emissions Reductions and Cost Impacts of Control Options Considered for Process Vents and Storage Vessels in EtO Service at PEPO Facilities

Control Option	Total Capital Investment ($)	Total Annualized Costs ($/yr)	EtO Emission Reductions (tpy)	EtO Cost Effectiveness ($/ton)
1	7,056,000	2,700,000	10.8	$250,000
2	5,040,000	1,957,000	10.4	$188,200

The EPA finds that Control Option 2 offers meaningful EtO emissions reductions (*i.e.*, over 95 percent of EtO emission reductions projected for Control Option 1 would still be achieved) at a more reasonable cost than Control Option 1 and addresses commenters' concerns with technical implementation challenges. Importantly, Control Option 2 targets the larger sources of EtO emissions. Although the EPA's cost estimates conservatively assume that many facilities would need to install a new thermal oxidizer, the added flexibilities in Control Option 2 may reduce that number, further reducing the compliance burden. By aligning the storage vessel applicability threshold with that finalized for equipment leaks (*i.e.*, a 1.0 weight percent EtO concentration or greater; see section IV.B.3.d of this preamble), this approach simplifies compliance and the determination of whether storage vessels and associated equipment fall within the scope of "in ethylene oxide service." Additionally, the cost effectiveness of Control Option 2 is within the range of values associated with finalized regulatory options in recent

rulemakings regulating EtO emissions, such as the commercial sterilizers NESHAP.[80] We also note that the cost-effectiveness of Control Option 2 is within the range of historically accepted cost-effectiveness values for highly toxic HAP (such as hexavalent chromium).[81] Therefore, the EPA is finalizing, pursuant to CAA section 112(d)(6), at 40 CFR 63.1423(b) the term "in ethylene oxide service" for process vents to mean each process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted EtO, and when combined, the sum of all these process vents within the process would emit uncontrolled EtO emissions greater than or equal to 100 lb/yr (45.4 kg/yr). The EPA also is updating the definition of "process vent" in the final rule at 40 CFR 63.1423(b) to align with this change. The EPA also is finalizing in the PEPO NESHAP at 40 CFR 63.1423(b) the term "in ethylene oxide service" for storage vessels to mean that the concentration of EtO in the stored liquid is greater than or equal to 1.0 percent by weight. The EPA also is finalizing, as proposed, that the exemption for "vessels and equipment storing and/or handling material that contains no organic HAP, or organic HAP as impurities only" listed in the definition of "storage vessel" at 40 CFR 63.1423(b) does not apply for storage vessels in EtO service.

In addition, the EPA is finalizing, as proposed, the procedures for determining whether process vents and/or storage vessels in EtO service meet the definition of the term "in ethylene oxide service," by reference to 40 CFR 63.109 for PEPO process vents and storage vessels in EtO service. The EPA is finalizing at 40 CFR 63.1425(g) a requirement that PEPO process vents in EtO service reduce emissions of EtO by either: (1) venting emissions through a closed vent system to a non-flare control device that

[80] In 2024, the EPA finalized multiple EtO emissions standards under CAA section 112(d)(6) for commercial sterilization facilities that had cost-effectiveness estimates of approximately $2,000,000 per ton of EtO (*see* 89 FR 24090 (Apr. 5, 2024)).
[81] For small hard chromium electroplating, the EPA finalized a requirement with a cost effectiveness of $15,000 per pound ($30,000,000 per ton) to provide an ample margin of safety (*see* 77 FR 58227-28 and 58239 (Sept. 19, 2012)).

reduces EtO by at least 99.9 percent by weight, to a concentration less than 1 ppmv for each process vent, or to less than 100 lb/yr for all combined process vents within the process, or (2) routing emissions through a closed vent system to a flare meeting the flare operating requirements at 40 CFR 63.1436 that the EPA is finalizing as proposed and as discussed in section IV.C of this preamble. At 40 CFR 63.1432(s) — by reference to the HON (*i.e.*, 40 CFR 63.138(b)(3) and (c)(3)) and accounting for differences between the HON and the PEPO NESHAP — the EPA is finalizing that PEPO storage vessels in EtO service reduce emissions of EtO by either: (1) venting emissions through a closed vent system to a non-flare control device that reduces EtO by at least 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 at 40 CFR 63.1436 that the EPA is finalizing, as proposed, and discussed in section IV.C of this preamble. The EPA is also finalizing procedures to determine compliance with these EtO standards at 40 CFR 63.1426(g) (by reference to 40 CFR 63.124 for PEPO process vents in EtO service and accounting for differences between the HON and the PEPO NESHAP) and 40 CFR 63.1432(s)(3) (by reference to 40 CFR 63.124 for PEPO storage vessels in EtO service and accounting for differences between the HON and the PEPO NESHAP).

Notably, the EPA disagrees with the commenters' requests to allow for good engineering judgment and process knowledge in 40 CFR 63.109(b)(2) to determine whether a storage vessel qualifies as "in ethylene oxide service" or to allow documentation of changes to the process or raw materials to revise the determination. The final definition of "in ethylene oxide service" lets an owner or operator designate emission points based on process knowledge; however, if an owner or operator wants to say an emission point is not in EtO service, they must use the procedures in 40 CFR 63.109. The EPA is allowing good engineering judgment at 40 CFR 63.109(c)(2) (for

equipment leaks) and (e) (for heat exchange systems) due to the difficulty and issues with sampling and testing fluid in process lines, particularly if the fluid contains EtO. Additionally, the rule already explicitly allows an owner or operator to calculate the concentration of EtO of the fluid stored in the storage vessels if information specific to the fluid stored, including data based on safety data sheets, is available.

Comment: Some commenters opposed the EPA's proposal at 40 CFR 63.1427(a) that owners and operators may not use the ECO pollution prevention technique to show compliance with the proposed standard for PEPO process vents in EtO service. Commenters stated that they routinely use the ECO option to reduce epoxide emissions and that the ECO option provides an efficient and cost-effective means to control epoxide emissions without secondary emissions or the additional energy consumption of a traditional control device.

A commenter stated that regulated entities should have the flexibility to perform ECO or to shorten the batch cycle and install emission control equipment as both options reduce EtO emissions. The commenter disagreed with the EPA's justification that achieving a 99.9 percent reduction of EtO from an onset of 1 ppmv is not practical using ECO and said that the proposed provision does not require a 99.9 percent reduction of EtO from a 1 ppmv onset. Instead, the commenter expressed that, in order to meet the treatment target for a process vent in EtO service, ECO would only need to achieve either a 99.9 percent reduction of EtO emissions or a concentration of 1 ppmv of EtO in the process vent. Additionally, the commenter argued that the EPA did not support the statement that the use of ECO could lead to high EtO emissions relative to the starting amount of epoxide used.

To support their argument, the commenter provided information on emissions reductions as a result of using ECO as an emissions control technique. The information showed that for two products, ECO can achieve 99.9 percent reductions in EtO emissions

based on the commenter's analysis. In addition, the commenter submitted a more detailed economic analysis as confidential business information to show when ECO is no longer economically feasible.

A different commenter acknowledged that while the economic breakpoint may have changed since the EPA originally promulgated the procedures to determine the onset, they disagree with the EPA's assertion that ECO is no longer economically viable and noted the conclusion was drawn from a single response to the EPA's CAA section 114 request. The commenter requested a discussion with the EPA on ways to revise the onset determination in 40 CFR 63.1427(c) while retaining the necessary emissions reductions and economic viability of the ECO option.

Another commenter said that the EPA did not provide adequate explanation to support elimination of the ECO option. They said that facilities should have the option to determine on their own whether use of ECO is economically viable. Additionally, the commenter noted that their facility only uses the ECO option while venting to a control device so that EtO emissions are controlled to required limits regardless of the starting amount of epoxide used.

Response: The EPA has reevaluated the use of ECO as a control technique to comply with EtO process vent standards. Although customer specifications for PEPO products increase the economic incentive to continue the reaction until less than 1 ppm EtO remains in the product, post-reaction steps could remove the EtO. Therefore, the traditional determination of economic breakpoint (*i.e.*, comparing the cost of the unreacted EtO to the cost of the reduced productivity of the reactor) is still relevant. The EPA would need more information to update the appropriate starting point of ECO under current economic conditions. Thus, given these uncertainties, the EPA is not finalizing the proposed elimination of ECO as a compliance option for the EtO process vent standards at this time.

d. Equipment Leaks in EtO Service

Comment: As previously mentioned in this preamble, several commenters requested that the EPA consider evaluating EtO-specific standards under CAA section 112(d)(6) instead of under CAA section 112(f)(2). For equipment that emits EtO, to minimize burden, commenters specifically requested that the EPA reduce the proposed monthly connector monitoring frequency and revise the proposed 0.1 weight percent EtO concentration threshold in the definition of equipment "in ethylene oxide service." Commenters indicated that there are significant logistical challenges to monitor all connectors monthly due to the large number of connectors that require monitoring. Commenters stated that gasket failure is the primary reason for connector leaks and, once repaired, connectors have a low frequency of repeat leaks. In addition, the commenters emphasized that monitoring connectors monthly would be particularly difficult if a facility is shut down for a portion of the month, as all connectors would need to be monitored within a 15-day period. Commenters recommended quarterly connector monitoring and encouraged the EPA to consider annual or semiannual connector monitoring frequencies. Commenters also stated that the EPA did not provide a reasonable justification to define equipment "in ethylene oxide service" at such a low concentration (*i.e.*, 0.1 weight percent EtO) and recommended that the EPA use a higher concentration threshold.

Response: The EPA is not finalizing standards under CAA section 112(f)(2) as part of this rulemaking. For more information on this decision, see section IV.A.4 of this preamble. Instead, as requested by commenters, the EPA has reevaluated control options for equipment leaks in EtO service under CAA section 112(d)(6), which requires the EPA to take into account any "developments in practices, processes, or control technologies" and to consider factors such as cost.

Under this framework, to assess what standards may be appropriate for equipment that leak EtO, the EPA considered previously reviewed information for existing LDAR programs for the chemical manufacturing industry discussed in the proposal and assessed the comments received during the public comment period. As part of that review, the EPA noted that two rules require control of leak emissions from equipment "in ethylene oxide service." In the HON and MON rulemakings, the EPA added EtO-specific requirements for equipment in EtO service. These rules' requirements for equipment "in ethylene oxide service" are more stringent than for equipment in organic HAP service.[82] Other regulations, permits, and voluntary initiatives have similarly structured LDAR programs (*i.e.*, with a defined monitoring frequency and leak definition) for a variety of chemical manufacturing facilities. For example, some chemical manufacturing area source facilities perform monthly or quarterly monitoring for EtO at leak definitions of 50 ppmv or 100 ppmv.[83]

Given the EtO-specific requirements in the HON and MON, the similarities in controlling equipment leak emissions across chemical manufacturing facilities, and the issues and recommendations provided by commenters (*i.e.*, commenters expressed that monthly monitoring was especially burdensome for connectors and recommended a reduced frequency, while also urging the EPA to target equipment with higher potential EtO emissions by raising the EtO concentration threshold for the LDAR program), the EPA evaluated six control options under CAA section 112(d)(6) for PEPO equipment that emit EtO for the final rule. The first option is the same control option the EPA proposed for the PEPO NESHAP under CAA section 112(f)(2), which reflects the same

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[82] 89 FR 42932 (May 16, 2024); 85 FR 49084 (Aug. 12, 2020).

[83] Chemical manufacturing area source facility LDAR program details are available in U.S. EPA, *Clean Air Act Section 112(d)(5) GACT Standard Analysis for Equipment Leaks that Emit Ethylene Oxide and Section 112(d)(6) Technology Review for Equipment Leaks from Chemical Manufacturing Process Units at Area Sources Subject to the CMAS NESHAP*, Document ID No. EPA-HQ-OAR-2024-0303-0027, appendix B.

EtO standard for equipment in EtO service subject to the HON. The first option defines equipment "in ethylene oxide service" as containing or contacting a fluid (liquid or gas) that contains at least 0.1 percent by weight EtO. Owners or operators achieve compliance for equipment "in ethylene oxide service" by performing monthly monitoring at a leak definition of 100 ppmv for gas/vapor and light liquid connectors and gas/vapor and light liquid valves and at a leak definition of 500 ppmv for light liquid pumps. The other five control options involve the impact of changing the EtO concentration threshold from 0.1 to 1 percent by weight EtO and changing the monitoring frequencies for connectors (from monthly to quarterly, semiannual, and annual) and for valves (from monthly to quarterly). The light liquid pump monitoring frequencies and leak definitions are the same for all the control options the EPA evaluated. Connectors account for almost 70 percent of all components at a PEPO PMPU; any reduction in their required monitoring frequency would substantially lower the time commitment and costs needed for PEPO facilities to comply with an LDAR standard for equipment leaks that emit EtO emissions.

The six EtO equipment leak control options the EPA evaluated for the final rule are:

- Control Option 1: 0.1 percent by weight EtO concentration threshold: monthly monitoring at 100 ppmv for gas/vapor and light liquid connectors and gas/vapor and light liquid valves, monthly monitoring at 500 ppmv for light liquid pumps (the proposed option);
- Control Option 2: 1 percent by weight EtO concentration threshold: monthly monitoring at 100 ppmv for gas/vapor and light liquid connectors and gas/vapor and light liquid valves, monthly monitoring at 500 ppmv for light liquid pumps;
- Control Option 3: 1 percent by weight EtO concentration threshold: quarterly monitoring at 100 ppmv for gas/vapor and light liquid connectors, monthly

monitoring at 100 ppmv for gas/vapor and light liquid valves, monthly monitoring at 500 ppmv for light liquid pumps;

- Control Option 4: 1 percent by weight EtO concentration threshold: quarterly monitoring at 100 ppmv for gas/vapor and light liquid connectors and gas/vapor and light liquid valves, monthly monitoring at 500 ppmv for light liquid pumps;
- Control Option 5: 1 percent by weight EtO concentration threshold: semiannual monitoring at 100 ppmv for gas/vapor and light liquid connectors, quarterly monitoring at 100 ppmv for gas/vapor and light liquid valves, monthly monitoring at 500 ppmv for light liquid pumps; and
- Control Option 6: 1 percent by weight EtO concentration threshold: maintain monitoring frequencies from the current PEPO requirements for non-EtO equipment, 100 ppmv leak definition for gas/vapor and light liquid connectors and gas/vapor and light liquid valves, 500 ppmv leak definition for light liquid pumps.

To assess the impacts of these control options, the EPA relied on data received pursuant to the Agency's CAA section 114 request. The EPA first assessed the impact of increasing the EtO threshold from 0.1 to 1 percent by weight EtO. The EPA does not have sufficient data to fully define the population of equipment between 0.1 and 1 percent by weight EtO (*i.e.*, EtO concentration data are not available for individual pieces of equipment). However, the EPA approximated this impact based on PEPO PMPU-level EtO concentration data. While a PMPU likely would have a combination of equipment that is above and below a 1 percent by weight EtO threshold, the responses to the EPA's CAA section 114 request only provided data to make this determination at the PEPO PMPU-level. The EPA determined that two PEPO PMPUs have an average EtO concentration less than 1 percent by weight EtO and excluded these PMPUs entirely from

the Agency's analyses when assessing the control options that used a threshold of 1 percent by weight EtO (*i.e.*, Control Options 2 through 6). The EPA otherwise applied the same methodology to estimate the costs and emissions reduction for the final rule as applied for the proposal. For the final rule, the EPA's impact analysis reflects 2024 dollars, and the Agency used an interest rate of 7.5 percent to calculate capital recovery factors. See the document titled *Updated Impact Calculations and Technology Review for the PEPO Production Source Category – Final Rule*, which is in the docket for this rulemaking, for details on the assumptions and methodologies the EPA used in this analysis.

Table 3 of this preamble presents the nationwide impacts for the control options considered for the final rule for equipment in EtO service. Table 3 shows the control options ordered from most stringent to least stringent; the incremental cost effectiveness shown for each option is in comparison to the next control option in the table.

Table 3—Nationwide Emissions Reductions and Cost Impacts of Control Options Considered for Equipment in EtO Service at PEPO Facilities

Control Option	Total Capital Investment ($)	Total Annualized Costs ($/yr)	EtO Emission Reductions (tpy)	EtO Cost effectiveness ($/ton)	Incremental EtO Cost Effectiveness ($/ton)
1	$113,000	$1,740,000	22.1	$78,900	$248,000
2	$65,400	$1,220,000	20.0	$60,900	$289,000
3	$65,400	$497,000	17.5	$28,300	$53,500
4	$65,400	$235,000	12.6	$18,700	$38,700
5	$65,400	$91,800	8.9	$10,300	$9,680
6	$65,400	$16,300	1.1	$15,100	--

While the cost effectiveness values of all the control options are within the range of values associated with finalized regulatory options in recent rulemakings regulating EtO emissions, such as the commercial sterilizers NESHAP,[84] and are within the range of historically accepted cost-effectiveness values for highly toxic HAP (such as hexavalent

[84] *See* 89 FR 24090 (Apr. 5, 2024).

chromium[85]), the EPA is finalizing Control Option 3 in lieu of the other control options evaluated, including Control Option 1 (the proposed option). The EPA is finalizing Control Option 3 to add an EtO-specific LDAR standard in the PEPO NESHAP for equipment in EtO service pursuant to CAA section 112(d)(6) because this option offers meaningful emissions reductions while significantly reducing compliance burdens (*e.g.*, compared to Control Option 1). As illustrated in Table 3 of this preamble, the EPA projects that Control Options 6, 5, 4, and 3 incrementally achieve increased EtO emissions reductions with steadily increasing annual costs associated with the increased monitoring frequencies. However, between Control Options 3 and 2 (*i.e.*, increasing connector monitoring frequency from quarterly to monthly), there is a significant jump in the annual cost without a similarly significant improvement to EtO emissions reductions. Additionally, Control Option 3 has annual costs 72 percent lower than Control Option 1, but the emission reductions are only 21 percent lower. Industry stakeholders also have emphasized the importance of targeting substantial sources of EtO emissions without imposing unnecessary logistical challenges that are not fully captured in the overall annual costs. For example, commenters pointed to certain maintenance situations that could limit the time available to conduct monthly connector monitoring to only a week or two—a situation that, while infrequent, the EPA is unable to fully account for in its costs analyses. The EPA also recognizes that emissions reductions benefits result from focusing attention and efforts on the equipment with higher potential for large emissions of EtO (*i.e.*, equipment prior to the polymerization reaction, which would contain process fluids with higher EtO content).

Therefore, pursuant to CAA section 112(d)(6), the EPA is finalizing at 40 CFR 63.1423(b) the term "in ethylene oxide service" for equipment to mean any equipment that contains or contacts a fluid (liquid or gas) that is at least 1.0 percent by weight EtO.

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[85] *See* 77 FR 58227-28 and 58239 (Sept. 19, 2012).

In addition, the EPA is finalizing requirements for quarterly monitoring at a leak definition of 100 ppmv for gas/vapor and light liquid connectors in EtO service, monthly monitoring at a leak definition of 100 ppmv for gas/vapor and light liquid valves in EtO service, and monthly monitoring at a leak definition of 500 ppmv for light liquid pumps in EtO service, at 40 CFR 63.1434(a)(3), by reference to the HON and accounting for the differences between the HON and the PEPO NESHAP.

Comment: Several commenters opposed the EPA's proposal to disallow the use of delay of repair for equipment in EtO service. The commenters said that the EPA's proposed elimination of delay of repair will increase emissions of EtO, increase costs, and eliminate needed flexibility for facilities to operate in a continuous manner without frequent shutdowns.

Commenters stated that lead times for shutdowns provide adequate time for facilities to order and test components but if the delay of repair provisions are eliminated for equipment in EtO service, the required lead times will result in extended shutdowns. The commenters asserted that while small EtO leaks may be able to be mitigated by off-the-shelf solutions, these cannot be used in every instance and finding an alternative can take more than the proposed 15-day repair window. One commenter stated that taking a tank out of service is a monumental task that is bound by strict process requirements due to safety concerns. The commenter said that requiring expedited shutdowns would pose serious safety hazards for workers due to the volatile nature of EtO.

Commenters stated that if the EPA's intent is to reduce EtO emissions from PEPO facilities, the Agency should continue to allow delay of repair, at least in situations where delaying repair would result in fewer EtO emissions than shutting down. A commenter also noted that the EPA did not quantify any potential emissions reductions associated with delay of repair. The commenter expressed that if the EPA had accounted for the emissions reductions from elimination of the delay of repair provisions, the analysis

would show that more frequent shutdown events would lead to emissions of approximately 5 to 340 pounds of EtO per event. The commenter provided an example where a leak repair would have to be delayed for 10 years before emissions exceeded those of a shutdown event.

A commenter recommended that the EPA consider alternatives if the full delay of repair provisions cannot be retained. The commenter proposed that the EPA allow owners or operators to delay repair for no more than five total components in EtO service and not allow repair delay for any component with a leak greater than or equal to 1,000 ppmv. According to the commenter, their proposed alternative would ensure that a minimal number of components would be on delay of repair status at any one time and that none of those components would have large leaks while providing facilities with flexibility needed to avoid unplanned shutdowns.

Response: For equipment in EtO service, the EPA is finalizing repair of leaks as soon as practicable but no later than 15 days after the leak is detected, with delay of repair allowed in limited circumstances, at 40 CFR 63.1434(a)(3)(iv). To address commenters' concerns that some equipment in EtO service would be difficult to repair without requiring a process shutdown and disrupting production, the EPA is not finalizing the proposed removal of delay of repair allowances for leaking equipment in EtO service. Instead, the EPA is maintaining the delay of repair requirements for equipment in organic HAP service at 40 CFR 63.171 as well as incorporating suggestions from commenters to create additional enforceable guardrails for equipment in EtO service to limit EtO emissions from leaks. These guardrails include restricting the number of components in EtO service that can be put on delay of repair status at a time, requiring continued monitoring of any equipment in EtO service on delay of repair status, and finalizing a leak action level that, if exceeded during the initial or continued monitoring, would no longer allow the repair to be delayed and would instead require repair

consistent with the equipment leak requirements (*i.e.*, repaired no later than 15 calendar days after the leak action level is exceeded).

For PEPO production sources, the EPA believes that the additional guardrails in this action for delaying repair of equipment in EtO service would significantly reduce the need for unscheduled shutdowns and continue to ensure achievement of the projected emission reductions from the revised equipment leak standards for equipment in EtO service. First, based on commenter suggestions, the EPA is limiting the number of components in EtO service in a PMPU that can be put on delay of repair to no more than five components at a time. To accommodate PMPUs with more than 5,000 pieces of equipment in EtO service, where the number of components that could be difficult to repair without a shutdown could increase proportionally, the EPA is alternatively allowing delay of repair of no more than 0.1 percent of the components in EtO service (rounded up to the next highest whole number). Second, the EPA is requiring that PEPO sources conduct monthly monitoring for any piece of equipment in EtO service on delay of repair to ensure the leak remains small. Consistent with comments, the EPA is finalizing a leak action level of 1,000 ppm for equipment in EtO service to ensure that owners or operators will quickly fix larger leaks. Owners or operations would need to repair equipment that they find is leaking at or above the 1,000 ppm action level no later than 15 calendar days after the leak action level is exceeded. This includes monthly monitoring events for equipment on delay of repair. If a leak grows such that a monthly monitoring event reveals that equipment placed on delay of repair is now leaking above the leak action level, the owner or operator of that piece of equipment can no longer delay repair. Instead, the owner or operator will need to fix the leak no later than 15 calendar days after detection of the leak action level exceedance. Lastly, the EPA is allowing PEPO production sources to delay repair of equipment in EtO service if the owner or operator can isolate the equipment from the process such that the equipment

does not remain in EtO service, similar to the requirements in 40 CFR 63.171(b). These isolated pieces of equipment would not count toward the five components or 0.1 percent of components calculation nor be subject to the continued monthly leak monitoring or leak action level, since the equipment would no longer have the potential to emit EtO.

Comment: Some commenters opposed the EPA's proposal to disallow skip periods for monitoring equipment in EtO service. One commenter expressed that removing skip periods increases costs for industry without reductions in emissions. The commenter cited the CAA section 114 data and stated that seven out of nine process units in EtO service for which the EPA had data indicated that there were no leaks detected in 2017, and thus, the Agency cannot justify the elimination of skip periods, given low initial leak rates. With respect to connectors specifically, the commenter claimed that they have a lower leak rate than valves and pumps, and that once repaired, there is a low frequency of repeat leaks. The commenter said that it is a waste of resources to monitor the same connectors every month if the facilities have low leak frequencies.

Another commenter suggested that instead of removing skip periods for gas/vapor and light liquid valves in EtO service, the EPA should use an approach similar to 40 CFR part 60, subparts VV, VVa, and VVb (*i.e.*, monitor monthly for two successive months and then monitor the first month of every subsequent quarter until a leak is detected). The commenter said that this approach would allow their facilities to focus resources on valves with leaks greater than 100 ppmv and not have to continue monitoring all valves on a monthly basis. Alternatively, the commenter recommended that owners and operators be allowed to subdivide valves in gas/vapor or light liquid service into two or three subgroups where, instead of monitoring all valves the first month of every quarter, each subgroup may be monitored in a different month, so long as each subgroup is monitored every three months.

Response: The EPA is finalizing specific monitoring frequencies consistent with its CAA section 112(d)(6) review and is not allowing skip periods for equipment in EtO service. Leaks are often random by nature, and the EPA has determined that consistent monitoring frequencies are necessary to ensure that the LDAR standard maintains the level of stringency evaluated for the technology review. Additionally, because the EPA is not finalizing fenceline monitoring requirements for EtO in this final rule, it is even more critical to ensure by other means that owners or operators control fugitive emissions to the intended level, and skip periods could lead to prolonged emissions from a random leak that owners or operators did not find due to a lack of monitoring. For connectors, as discussed earlier in this section, the EPA has changed monitoring frequency in the final rule to quarterly instead of monthly, as proposed. This change addresses the biggest challenge indicated by commenters and alleviates concerns about the potential impact of removing skip frequencies and requiring monthly connector monitoring. Considering all these factors and the cost effectiveness of the standard, the EPA is not allowing skip periods for equipment in EtO service.

e. Heat Exchange Systems in EtO Service

Comment: As previously mentioned in this preamble, several commenters requested that the EPA consider evaluating EtO-specific standards under CAA section 112(d)(6) instead of under CAA section 112(f)(2). Commenters declared that the proposed requirements for heat exchange systems that emit EtO were above and beyond what is appropriate and necessary to control EtO emissions. Commenters stated that the EPA's proposal to conduct weekly monitoring using the Modified El Paso Method is an undue, repetitive strain on personnel with little environmental benefit. Instead, commenters recommended that the EPA consider either monthly or quarterly monitoring options. Commenters also urged the EPA to consider setting a concentration threshold for EtO above the proposed 0.1 weight percent when determining which heat exchangers

qualify as being "in ethylene oxide service." One commenter suggested that the current monitoring frequency and concentration threshold for PEPO heat exchangers in organic HAP service (*i.e.*, quarterly monitoring, applicable to heat exchangers that contain a process fluid that is at least 5 weight percent organic HAP) are sufficient to control EtO emissions from heat exchangers.

Response: The EPA is not finalizing standards under CAA section 112(f)(2) as part of this rulemaking. For more information on this decision, see section IV.A.4 of this preamble. Instead, as requested by commenters, the EPA has reevaluated control options for heat exchange systems in EtO service under the CAA section 112(d)(6) authority, which requires the EPA to take into account any "developments in practices, processes, or control technologies" and to consider factors such as cost.

Under this framework, to identify and evaluate standards that may be appropriate for heat exchange systems that emit EtO, the EPA considered previously reviewed information from other rulemakings for the chemical manufacturing industry, assessed the public comments, and considered the new requirements for PEPO heat exchange systems in organic HAP service that the EPA is finalizing in this action. The EPA identified use of the Modified El Paso Method to monitor for heat exchange system leaks multiple times, although the specific requirements vary. The EPA assessed two control options for heat exchange systems that emit EtO. To start, as discussed in sections IV.B.1 and IV.B.2 of this preamble, the EPA proposed and are finalizing that heat exchange systems in organic HAP service must use the Modified El Paso Method.[86]

The EPA first reassessed the same control option the Agency proposed for the PEPO NESHAP under CAA section 112(f)(2). At proposal, the EPA identified one rule requiring control of emissions from heat exchange systems "in ethylene oxide service."

[86] In organic HAP service means the heat exchanger contains a process fluid that is 5 percent or greater by weight organic HAP.

In the 2024 HON rulemaking, the EPA added EtO-specific requirements for heat exchange systems in EtO service.[87] There are minimal operational differences between controlling heat exchange system emissions from HON chemical manufacturing process units (CMPUs) and PEPO PMPUs. As such, Control Option 1 reflects the same control option the EPA proposed for the PEPO NESHAP under CAA section 112(f)(2) and also reflects the exact same EtO standard for heat exchange systems in EtO service subject to the HON. Control Option 1 defines "in ethylene oxide service" for heat exchange systems as any heat exchange system in a process that cools process fluids (liquid or gas) that are 0.1 percent or greater by weight of EtO. Under Control Option 1, compliance for heat exchange systems "in ethylene oxide service" is achieved by conducting weekly monitoring using the Modified El Paso Method and repairing leaks of total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or greater within 15 days from the sampling date, with no delay of repair allowed.

In response to commenters' concerns that the proposed control requirements for heat exchange systems in EtO service may be unnecessarily stringent (particularly in light of the EPA's acknowledgment that the 2017 NEI contained no reported EtO leaks), the Agency also evaluated an alternative approach, Control Option 2. This option mirrors Control Option 1 in regulating heat exchange systems "in ethylene oxide service" but introduces key distinctions that offer greater flexibility. Most notably, in Control Option 2, the EPA raises the percent by weight threshold in the definition of "in ethylene oxide service" from 0.1 percent by weight to 1 percent by weight and require monthly (instead of weekly) monitoring using the Modified El Paso Method. The EPA recognizes that there are benefits to focusing attention and efforts on heat exchange systems that have a higher potential for large leaks of EtO because they service process fluids with higher EtO content; thus, the EPA evaluated a 1 percent by weight threshold to represent the

[87] 89 FR 42932 (May 16, 2024).

EtO content expected in process fluids (cooled by the heat exchange system) prior to the polymerization reaction. Control Option 2 also requires repairing leaks of total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or greater within 45 days and allows delay of repair in certain circumstances as it encompasses a delay of repair action level of total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv—a level that, if exceeded during leak monitoring, would require immediate repair (*i.e.*, the leak found cannot be put on delay of repair and would be required to be repaired within 30 days of the monitoring event). Given the absence of data on the prevalence and magnitude of EtO leaks from heat exchange systems in EtO service at PEPO sources, the EPA agrees with commenters that increasing the frequency of monitoring (*e.g.*, going from monthly monitoring in Control Option 2 to weekly monitoring in Control Option 1) might not yield meaningful emissions reductions and that any additional modeled reductions appear to be minimal. Further, in evaluating Control Option 2, the EPA recognizes that less frequent monitoring could alleviate burdens on LDAR technicians and that providing flexibility to delay repairs may help facilities avoid unnecessary process shutdowns.

To assess the impacts of the two control options, the EPA assumed that the provisions would affect all 20 PEPO facilities with processes that use and emit EtO. As part of the EPA's analysis, the Agency assumed that owners or operators conducting monitoring for three or more heat exchange systems would elect to purchase a stripping column and flame ionization detector analyzer and perform in-house Modified El Paso Method monitoring, because the total annualized costs for in-house Modified El Paso Method monitoring are less than the costs for contracted services. In addition, the EPA assumed that owners or operators could repair leaks by plugging a specific heat exchanger tube, and if a heat exchanger is leaking to the extent that it needs replacing, then it is effectively at the end of its useful life. Therefore, the EPA determined that the

cost of replacing a heat exchanger is an operational cost that the owner or operator would incur as a result of routine maintenance and equipment replacement and not attributable to the control option. For the final rule, the EPA's impact analysis reflects 2024 dollars. The EPA also used an interest rate of 7.5 percent over a 5-year period in the capital recovery factor for the useful life of a quality assurance plan and/or Modified El Paso Method monitoring system (depending on whether the monitoring is contracted out or performed in-house). See the document titled *Updated Impact Calculations and Technology Review for the PEPO Production Source Category –Final Rule*, which is in the docket for this rulemaking, for details on the assumptions and methodologies used in this analysis.

Table 4 of this preamble presents the nationwide impacts for the two control options considered for the final rule for heat exchange systems in EtO service.

Table 4—Nationwide Emissions Reductions and Cost Impacts of Control Options Considered for Heat Exchange Systems in EtO Service at PEPO Facilities

Control Option	Total Capital Investment ($)	Total Annualized Costs ($/yr)	EtO Emission Reductions (tpy)	EtO Cost Effectiveness ($/ton)
1 (weekly)	200,200	326,000	11.3	29,000
2 (monthly)	200,200	73,000	11.1	6,600

Although Control Option 1 could be considered to be cost effective, there is uncertainty in the prevalence of heat exchange system leaks and commenters have identified potential disruptions associated with requiring operations and lab staff to conduct monitoring activities every week and to repair potentially complex equipment without allowances for delays. The EPA is finalizing Control Option 2 to add EtO standards in the PEPO NESHAP for heat exchange systems in EtO service pursuant to CAA section 112(d)(6) because it is lower cost and provides similar reductions to Option 1. However, the EPA observes that the conclusion that it is necessary under CAA section 112(d)(6) to require Option 2 based on the estimated costs and reductions is uncertain.

For example, our analysis did not consider leak data from smaller heat exchangers such as those used in the PEPO source category. Accordingly, we intend to reconsider this control option to allow for a more complete understanding of these sources and their EtO emissions. The EPA's intent to reconsider will also allow us to ensure full consideration of similar provisions currently being reconsidered in the HON, a related chemical sector NESHAP frequently cross-referenced by the PEPO NESHAP. Pursuant to CAA section 112(d)(6), the EPA is finalizing at 40 CFR 63.1423(b) the term "in ethylene oxide service" for heat exchange systems to mean any heat exchange system in a process that cools process fluids (liquid or gas) that are 1.0 percent or greater by weight of EtO. In addition, the EPA is finalizing monthly monitoring for leaks for heat exchange systems in EtO service using the Modified El Paso Method at 40 CFR 63.1435(a), which references the HON (*i.e.*, 40 CFR 63.104(g)(6)) and accounts for differences between the HON and the PEPO NESHAP. If the owner or operator finds a leak, the EPA is requiring repair of the leak to reduce the concentration or mass emissions rate below the applicable leak action level as soon as practicable but no later than 45 days after collecting the sample, with delay of repair allowed based on a delay of repair action level of total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv—a level that, if exceeded during leak monitoring, would require immediate repair (*i.e.*, the leak found cannot be put on delay of repair and would be required to be repaired within 30 days of the monitoring event).[88]

f. Wastewater in EtO Service

Comment: As previously discussed in this preamble, several commenters requested that the EPA consider evaluating EtO-specific standards under CAA section 112(d)(6) instead of under CAA section 112(f)(2). For wastewater that emits EtO,

[88] *See* 40 CFR 63.1435(a), which references the HON (*i.e.*, 40 CFR 63.104(h)(6)) and accounts for differences between the HON and the PEPO NESHAP.

commenters suggested that the standard should focus on streams with higher concentrations and higher overall amounts of EtO. Commenters strongly opposed the EPA's proposed EtO concentration threshold of 1 ppmw in the definition of wastewater streams "in ethylene oxide service" and stated that there would be significant costs to control streams at this low concentration with minimal impact on emission reductions. Commenters further contended that the EPA should account for the total mass of EtO present in wastewater streams. They suggested that regulating only those streams exceeding a specific mass threshold could achieve substantial emission reductions while limiting the number of streams requiring control.

Response: The EPA is not finalizing standards under CAA section 112(f)(2) as part of this rulemaking. For more information on this decision, see section IV.A.4 of this preamble. Instead, as requested by commenters, the EPA has reevaluated control options for wastewater in EtO service under the CAA section 112(d)(6) authority, which requires the Agency to take into account any "developments in practices, processes, or control technologies" and to consider factors such as cost.

Under this framework, to assess what standards may be appropriate for wastewater emitting EtO, the EPA considered previously reviewed information for wastewater controls from other rulemakings and considered the public comments. As part of that review, the EPA noted one rule requiring control of emissions from wastewater "in ethylene oxide service." In the HON rulemaking, the EPA added EtO-specific requirements for wastewater in EtO service; the requirements for wastewater "in ethylene oxide service" are more stringent than for wastewater in organic HAP service.[89]

Given the EtO-specific requirements in the HON, the minimal operational differences between controlling emissions from HON CMPUs and PEPO PMPUs, and the issues and recommendations provided by commenters (*i.e.*, focus on streams with

[89] 89 FR 42932 (May 16, 2024).

higher EtO concentrations and higher overall amounts of EtO), the EPA evaluated two control options under CAA section 112(d)(6) for PEPO wastewater that emit EtO for the final rule. The first option is the same control option the EPA proposed for the PEPO NESHAP under CAA section 112(f)(2), which reflects the same EtO standard for wastewater in EtO service subject to the HON. This option defines "in ethylene oxide service" for wastewater as any wastewater stream that contains total annual average concentration of EtO greater than or equal to 1 ppmw at any flow rate, and a wastewater stream in EtO service is considered a Group 1 wastewater stream. Under Control Option 1, facilities achieve compliance for wastewater "in ethylene oxide service" by reducing, by removal or destruction, the concentration of EtO to a level less than 1 ppmw.

In response to commenter feedback urging the EPA to target wastewater streams with higher EtO concentrations and total EtO amounts, the Agency evaluated Control Option 2 for the final rule. This option mirrors Control Option 1 in regulating wastewater "in ethylene oxide service" but introduces key distinctions that offer greater flexibility. Most notably, in Control Option 2, the EPA raises the EtO concentration threshold that triggers control requirements from 1 ppmw to 10 ppmw, based on commenters' suggestions that the Agency consider raising the threshold and consider wastewater control requirements similar to those in 40 CFR part 61, subpart FF, which has a threshold of 10 ppmw (for benzene, the pollutant regulated in subpart FF). This means that only wastewater streams with EtO concentrations at or above 10 ppmw would be subject to control under Control Option 2, whereas Control Option 1 applies to streams with concentrations as low as 1 ppmw. The data from the CAA section 114 request show that PEPO wastewater streams reported with EtO concentrations below 10 ppmw contribute a small amount (less than 0.1 percent) to the overall wastewater EtO load and EtO emissions. This provision distinguishes Control Option 2 from Control Option 1 by prioritizing regulatory focus on streams with higher EtO concentrations and total

emissions, where control measures are likely to be more effective at achieving emissions reductions. In response to commenter feedback urging the EPA to consider a total source EtO mass flow rate threshold in the final rule (*e.g.*, commenters recommended alignment with standards like 40 CFR part 61, subpart FF, that contain a total source mass flow rate threshold), Control Option 2 also introduces an exemption for wastewater streams in EtO service that is not part of Control Option 1. Specifically, Control Option 2 includes an exemption for wastewater streams in EtO service that cumulatively contain less than 1 megagram (approximately 1.1 tons) of EtO per year, thus excluding low-volume streams from control requirements.

Additionally, the EPA understands that the proposed compliance option (*i.e.*, reduce the concentration of EtO of each wastewater stream, by removal or destruction, to a level less than 1 ppmw), could be difficult to achieve for streams with a high EtO load. Therefore, the EPA is expanding the compliance pathways to allow facilities to choose between using three different performance standards for treatment processes, including reducing the concentration of EtO of each wastewater stream, by removal or destruction, to a level less than 1 ppmw, or complying with the Group 1 wastewater stream requirements outlined in 40 CFR 63.138(d) or (e). Per 40 CFR 63.138(d), the owner or operator must operate and maintain a steam stripper that meets certain design requirements. Per 40 CFR 63.138(e), the owner or operator must reduce, by removal or destruction, the mass flow rate of EtO by at least 98 percent. Although EtO is biodegradable, its low biodegradability factor indicates that conventional biological treatment alone would only reduce its concentration by about half.[90] Therefore, additional treatment, such as steam stripping, is necessary to reliably remove the remaining EtO

[90] EtO has a fraction emitted (Fe) factor of 0.5. The Fe is the mass fraction of a HAP emitted from the wastewater collection and downstream biological treatment system. Fe is an indicator of the fraction of a compound expected to be an air emission out of wastewater in typical chemical sector collection and treatment systems.

from the wastewater. With any of these compliance options, the EPA expects that facilities would use steam stripping to control the wastewater streams, but facilities would have more flexibility in demonstrating compliance. Regardless of the compliance option an owner or operator chooses, they still must comply with the applicable control device requirements in 40 CFR 63.139 and 40 CFR 63.145(i) and (j) when venting gases from the treatment process, as well as the applicable leak inspection provisions in 40 CFR 63.148.

To assess the impacts of the two control options, the EPA used information for 24 PEPO wastewater streams (each containing a total annual average concentration of EtO greater than or equal to 1 ppmw) that four PEPO facilities that received the CAA section 114 request provided to the EPA. Using this comprehensive dataset, the EPA estimated that both control options would affect five PEPO facilities (*i.e.*, all four PEPO facilities that received the CAA section 114 request plus one additional PEPO facility). Importantly, for the final rule, the EPA implemented procedures for addressing ambiguity in certain reported EtO concentrations by interpreting reported values (from the CAA section 114 request) that contained a "less than" symbol for values reported as "<1,000" and "<100" as one order of magnitude lower than stated. For instance, if a respondent reported a value as "<1,000," the EPA's approach for the final rule assumed the actual value to be "100." The EPA's underlying rationale for this approach is that if the respondent had intended to indicate a value below 100, they would have explicitly reported it as "<100" rather than using the broader "<1,000" threshold. This method ultimately provides a conservative estimate of impacts that accounts for ambiguity in the data.

The EPA calculated the cost of installing a steam stripper using the cost algorithm for wastewater steam stripper requirements, used for the development of the HON, for each of the five PEPO facilities that the Agency determined the two control options

would impact.[91] For the final rule, the impact analysis reflects 2024 dollars. The EPA also uses an interest rate of 7.5 percent over a 20-year period in the capital recovery factor for steam strippers. See the document titled *Updated Impact Calculations and Technology Review for the PEPO Production Source Category – Final Rule*, which is in the docket for this rulemaking, for details on the assumptions and methodologies the EPA used in this analysis.

Table 5 of this preamble presents the nationwide impacts for the two control options considered for the final rule for wastewater in EtO service.

Table 5—Nationwide Emissions Reductions and Cost Impacts of Control Options Considered for Wastewater in EtO Service at PEPO Facilities

Control Option	Total Capital Investment ($)	Total Annualized Costs ($/yr)	EtO Emission Reductions (tpy)	EtO Cost Effectiveness ($/ton)
1	14,100,000	5,500,000	38.2	144,000
2	13,600,000	5,200,000	37.2	140,000

While the cost effectiveness values of both control options are within the range of values associated with finalized regulatory options in recent rulemakings regulating EtO emissions, such as the commercial sterilizers NESHAP,[92] and are within the range of historically accepted cost-effectiveness values for highly toxic HAP (such as hexavalent chromium[93]), the EPA is finalizing Control Option 2 in lieu of Control Option 1. The EPA is finalizing Control Option 2 to add EtO standards in the PEPO NESHAP for wastewater in EtO service pursuant to CAA section 112(d)(6) because this option offers meaningful emissions reductions while significantly reducing compliance burdens, compared to Control Option 1. Commenters have emphasized the importance of targeting substantial sources of EtO emissions without imposing unnecessary complexity on

[91] U.S. EPA, *Hazardous Air Pollutant Emissions from Process Units in the Synthetic Organic Chemical Manufacturing Industry—Background Information for Proposed Standards, vol. 1C: Model Emission Sources* (Nov. 1992) (EPA-453/D-92-016c).
[92] *See* 89 FR 24090 (Apr. 5, 2024)
[93] *See* 77 FR 58227-28 and 58239 (Sept. 19, 2012).

facilities managing smaller sources. The EPA recognizes that requiring control of minor EtO sources can introduce implementation challenges, which the EPA has mitigated by refining the definition of "in ethylene oxide service."

For wastewater "in ethylene oxide service," the EPA's data indicate that the revised criteria (*i.e.*, Control Option 2) would exclude at least 30 percent of the wastewater streams in EtO service that the proposed rule (*i.e.*, Control Option 1) would have affected. The EPA's analysis indicates that a small subset of wastewater streams accounts for the majority of EtO emissions at most PEPO facilities. In contrast, low-flow, low-concentration, or intermittent streams contribute minimally to EtO emissions at most PEPO facilities and are often subject to significant variability, making consistent control both technically challenging and potentially inefficient.

Overall, the EPA believes Control Option 2 strikes a balance between meaningful emissions reductions and practical implementation, making it a sound choice despite having a similar cost to Control Option 1. Therefore, pursuant to CAA section 112(d)(6) the EPA is finalizing at 40 CFR 63.1423(b) the term "in ethylene oxide service" for wastewater to mean any wastewater stream that contains total annual average concentration of EtO greater than or equal to 10 ppmw at any flow rate. The EPA is also updating the definition of "wastewater" in the final rule at 40 CFR 63.1423(b) to align with this change. In addition, the EPA is finalizing, as proposed, the procedures for determining whether a wastewater stream is in EtO service within the definition of the term "in ethylene oxide service" by reference to 40 CFR 63.109 for PEPO wastewater streams in EtO service. The EPA also is finalizing at 40 CFR 63.1433(s)(23) a requirement — by reference to the HON and accounting for differences between the HON and the PEPO NESHAP — that owners and operators must reduce the concentration of EtO of each wastewater stream, by removal or destruction, to a level less than 1 ppmw, or comply with the Group 1 wastewater stream control requirements

outlined in 40 CFR 63.138(d) or (e). Additionally, the EPA is finalizing an exemption to this requirement at 40 CFR 63(s)(23)(iii)(D) for wastewater streams in EtO service that cumulatively contain less than 1 megagram (approximately 1.1 tons) of EtO per year, where the owner or operator annually samples the exempted wastewater streams to verify that they are below this threshold. The EPA also is finalizing language at 40 CFR 63.1433(s)(23) to clarify that if an owner or operator elects to either reduce the EtO concentration in each wastewater stream to below 1 ppmw or achieve at least a 98 percent reduction in EtO mass flow rate, they must conduct a performance test to demonstrate compliance instead of a design evaluation. Alternatively, if the owner or operator chooses to operate and maintain a steam stripper that meets the design specifications outlined in 40 CFR 63.138(d), the EPA is not requiring a performance test or design evaluation.

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

The EPA's technology review focused on the identification and evaluation of developments in practices, processes, and control technologies that have occurred since the EPA promulgated the previous technology review for the PEPO NESHAP.[94] Specifically, the EPA focused the technology review on all existing MACT standards for the various emission sources in the PEPO Production source category, including heat exchange systems, storage vessels, process vents, wastewater, and equipment leaks in organic HAP service. In the proposal, the EPA identified cost-effective developments for PEPO heat exchange systems, storage vessels, process vents, and equipment leaks, and the Agency proposed revising the standards for these four emissions sources under the technology review. The EPA did not identify developments in practices, processes, or control technologies for wastewater in organic HAP service. For managing fugitive

[94] *See* 59 FR 17340 (Mar. 27, 2014).

emissions, the EPA also proposed a fenceline monitoring work practice standard under the technology review. Further information regarding the technology review is in the proposed rule and in the supporting materials in the rulemaking docket.

During the public comment period, the EPA received several comments on the Agency's proposed determinations for the technology review. The comments and the EPA's specific responses and rationale for the Agency's final decisions are in section IV.B.3 of this preamble and in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking.

No information presented by commenters has led the EPA to change the Agency's proposed determination under CAA section 112(d)(6) for batch process vents, equipment leaks, and wastewater in organic HAP service. For batch process vents in organic HAP service (those associated with the use of a nonepoxide organic HAP to make or modify the product), the EPA is finalizing the determination that revising the PEPO NESHAP control threshold from 26,014 lb/yr to 10,000 lb/yr and removing the associated flow rate applicability thresholds is a cost-effective development under CAA section 112(d)(6). For equipment leaks in organic HAP service, the EPA is finalizing the Agency's determination that using a leak definition of 100 ppmv for valves that are in either gas/vapor service or light liquid service is a cost-effective development under CAA section 112(d)(6). For wastewater in organic HAP service, the EPA is finalizing the Agency's determination that no changes to the standard are warranted.

However, based on comments received on the proposed revisions for heat exchange systems and storage vessels in organic HAP service, the EPA is making two minor clarifications: (1) owners and operators do not have to monitor their regulated heat exchange systems using water sampling methods or a surrogate indicator if the heat exchange system is monitored for leaks using the Modified El Paso Method, and (2) the

Agency is allowing more time for owners and operators to install upgraded deck fittings and controls for guidepoles for all storage vessels equipped with an IFR. Additionally, based on comments received on the proposed revisions for continuous process vents in organic HAP service, the EPA is retaining use of the TRE index value concept and the current definition of a "Group 1 continuous process vent." This definition refers to a process vent from a continuous unit operation that is associated with the use of a nonepoxide organic HAP to make or modify the product and that has: (1) a flow rate greater than or equal to 0.005 scmm, (2) a total organic HAP concentration greater than or equal to 50 ppmv, and (3) a TRE index value less than or equal to 1.0. Also, based on comments received on the proposed fenceline monitoring requirements, the final rule excludes all elements of the proposed fenceline monitoring requirements.

Finally, the EPA has broadened its technology review beyond the scope of PEPO emission sources in organic HAP service. This expanded review now evaluates developments in practices, processes, and control technologies for PEPO sources that specifically emit EtO. This approach responds to public comments urging the Agency to evaluate EtO-specific standards under CAA section 112(d)(6) rather than under CAA section 112(f)(2). Consequently, the Agency is addressing EtO emissions from PEPO production sources under its authority provided by CAA section 112(d)(6). Based on comments received, the EPA is finalizing requirements under CAA section 112(d)(6), as described in sections IV.B.3.c through IV.B.3.f of this preamble, for EtO-emitting sources that require further control of EtO emissions beyond what is required by the organic HAP standards.

C. Amendments Pursuant to CAA Section 112(d)(2) and (3) and 112(h) for the PEPO Production Source Category

1. What did we propose pursuant to CAA section 112(d)(2) and (3) and 112(h) for the PEPO Production source category?

Under CAA section 112(d)(2) and (3), the EPA proposed to amend the operating and monitoring requirements for flares used to reduce emissions from PEPO production processes. The EPA proposed to directly apply the petroleum refinery flare rule requirements in 40 CFR part 63, subpart CC, to PEPO flares 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 PEPO flares and specifying additional requirements when an owner or operator uses a gas chromatograph or mass spectrometer for compositional analysis. Specifically, the EPA proposed to retain the General Provisions requirements of 40 CFR 63.11(b) such that PEPO flares operate pilot flame systems continuously and that these flares operate with no visible emissions (except for periods not to exceed a total of five minutes during any two consecutive hours) when the flare vent gas flow rate is below the smokeless capacity of the flare. The EPA also proposed to consolidate measures related to flare tip velocity and new operational and monitoring requirements related to the combustion zone gas for PEPO flares. Further, in keeping with the elimination of the startup, shutdown, and malfunction exemption, the EPA proposed a work practice standard related to the visible emissions limits during periods when a PEPO flare is operated above its smokeless capacity (*e.g.*, periods of emergency flaring). The EPA proposed eliminating the cross-references to the General Provisions and instead specifying all operational and monitoring requirements that apply to PEPO flares in the applicable subparts.

In addition, the EPA proposed provisions and clarifications in the PEPO NESHAP for bypass lines on closed vent systems, and the Agency proposed adding work practice standards for certain activities where alternatives are appropriate to ensure that CAA section 112 standards apply continuously, consistent with *Sierra Club v. EPA*.

For bypass lines on closed vent systems, the EPA proposed that an owner or operator may not bypass the APCD at any time, that a bypass is a violation, and that the owner or operator must estimate, maintain records, and report the quantity of organic HAP released.

Under CAA section 112(h), the EPA proposed a work practice standard for maintenance vents and equipment openings requiring that, prior to opening process equipment to the atmosphere, the owner or operator of that equipment must: (1) drain and purge the equipment to a closed system so that the concentration of the vapor in the equipment served by the maintenance vent is less than or equal to 10 percent of the lower explosive limit (LEL); (2) open and vent the equipment to the atmosphere only if the 10 percent LEL cannot be demonstrated and the pressure is less than or equal to 5 pounds per square inch gauge (psig), provided no active purging of the equipment occurs to the atmosphere until the LEL criterion is met; (3) open the equipment when it would emit less than 50 lbs of VOC 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 that the owner or operator cannot meet the other proposed work practice standards.

Also under CAA section 112(h), the EPA proposed a work practice standard for storage vessel degassing to allow owners or operators to vent storage vessels to the atmosphere once a storage vessel degassing concentration threshold is met (*i.e.*, once the vapor space concentration is less than 10 percent of the LEL) and the owner or operator has removed all standing liquid from the vessel to the extent practicable. The EPA also proposed an organic HAP concentration cutoff of 5,000 ppmv (measured as methane) as an equivalent alternative to reducing the vapor space concentration to less than 10 percent of the LEL. In addition, the EPA proposed that owners or operators may open a floating

roof storage vessel prior to degassing to set up equipment (*i.e.*, make connections to a temporary control device), but owners or operators must use this approach in a limited manner and not actively purge the storage vessel while making connections. Finally, the EPA proposed to prohibit owners and operators from filling the storage vessel during these periods (such that the vessel would emit HAP to the atmosphere for a limited amount of time due to breathing losses only).

To clarify the standards applying to pressure vessels, the EPA proposed to define pressure vessel to mean "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" and to remove the exemption for "pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere" from the definition of storage vessel. The EPA proposed requiring no detectable emissions at all times (*i.e.*, each point on the pressure vessel where total organic HAP could potentially be emitted must have an instrument reading less than 500 ppmv); initial and annual monitoring using EPA Method 21 of 40 CFR part 60, appendix A-7; and routing organic HAP through a closed vent system to a control device (*i.e.*, no releases to the atmosphere through any points on the pressure vessel). The EPA also proposed requiring owners or operators to control gaseous emission streams from surge control vessels and bottoms receivers — if considered process vents as defined in 40 CFR 63.1423 — to reduce organic HAP in accordance with the applicable process vent control standards outlined in 40 CFR 63.1425 through 63.1431. In addition, the EPA proposed that owners and operators of PEPO transfer racks that load materials with an MTVP greater than or equal to 0.5 pounds per square inch absolute (psia) (3.45 kPa) under actual storage conditions (*i.e.*, Group 1 transfer racks as defined in 40 CFR 63.1423(b)) must comply with the HON requirements at 40 CFR 63.126 through 63.130, if the material contains organic HAP as defined by 40 CFR

63.1423(b). The EPA proposed that the requirements to use a vapor balance system or reduce emissions by 90 percent during loading operations (at a transfer rack) are consistent with CAA section 112(d) controls and reflect the MACT floor for transfer racks at existing PEPO sources. The EPA also proposed that the transfer rack requirements in the HON (*i.e.*, to reduce emissions by 98 percent by weight or to an exit concentration of 20 ppmv during loading operations at a transfer rack) are consistent with CAA section 112(d) controls and reflect the MACT floor for transfer racks at new PEPO sources and beyond-the-floor control for transfer racks at existing PEPO sources. In addition, the EPA proposed the addition of butylene oxide to the definition of "epoxide" in 40 CFR 63.1423(b) and to the list of HAP presented in Table 4 to the PEPO NESHAP, and the EPA proposed to remove the 40 CFR 63.1420(d)(3) exemption for certain processes currently excluded from the affected source (*i.e.*, unregulated steps in the PEPO production process which may include but are not limited to solvent removal, purification, drying, and solids handling operations). The EPA proposed that all these requirements are consistent with CAA section 112(d) or 112(h) and reflect the MACT floor, and except for PEPO transfer racks, the EPA did not identify any additional options beyond these (*i.e.*, beyond-the-floor options) for controlling emissions from these emission sources. For existing PEPO transfer racks, the EPA did propose a beyond-the-floor option. More information concerning the EPA's proposed requirements under CAA section 112(d)(2) and (3) and 112(h) is in section IV.D of the proposal preamble.

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

Except for two minor revisions based on comment, the EPA is finalizing, as proposed, all the amendments described in section IV.C.1 of this preamble. In response to a commenter's request, the EPA is incorporating operational and monitoring requirements for pressure-assisted multi-point flares into the final rule. The EPA is also

revising the Agency's proposal based on comment to include overlap provisions in the PEPO NESHAP (for owners and operators currently complying with the MON) related to the removal of the 40 CFR 63.1420(d)(3) exemption for certain processes currently excluded from the affected source.

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

This section provides summaries of and responses to the key comments received regarding the EPA's proposed emission standards for transfer operations and the Agency's proposal to remove the 40 CFR 63.1420(d)(3) exemption for certain processes currently excluded from the affected source. Other comment summaries and the EPA's responses for issues raised regarding the proposed revisions for flares, bypass lines on closed vent systems, maintenance vents and equipment openings, storage vessel degassing, planned routine maintenance of storage vessels, pressure vessels, surge control vessels and bottoms receivers, and the addition of butylene oxide to the rule are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking.

a. Transfer Racks

Comment: A commenter argued that the EPA did not adhere to CAA section 112(d)(2) because the EPA did not indicate that it considered costs in determining that a beyond-the-floor standard of 98 percent by weight control or an outlet concentration of 20 ppmv was appropriate for transfer racks at PEPO sources. The commenter stated that the EPA must provide a reasonable explanation of how the Agency determined that the additional costs of going from 90 percent control to 98 percent control are warranted or refrain from finalizing beyond-the-floor standards for transfer racks at existing PEPO sources.

Response: The EPA is not changing the final rule as a result of this comment. The EPA disagrees with the commenter that the Agency did not indicate that the EPA considered costs in determining that a beyond-the-floor standard of 98 percent by weight control or an outlet concentration of 20 ppmv was appropriate for transfer racks at PEPO sources. In the EPA's proposal, the Agency provided a reasonable explanation of how the Agency determined that no impacts would occur from the shift from 90 percent control to 98 percent control (*i.e.*, materials loaded through transfer racks at PEPO Production sources have low vapor pressures of less than 0.3 psia based on CAA section 114 data and do not meet the vapor pressure applicability criteria). Notably, commenters did not provide any additional cost information or provide any additional information for the EPA to consider in revising its analysis. As the EPA pointed out in the proposal, achieving a 98 percent control efficiency for transfer racks is a well-established practice under existing chemical sector regulations (*e.g.*, the HON), and the PEPO NESHAP consistently references the HON for various emission standards. Although specific data for PEPO-related transfer racks is limited, the widespread implementation of the 98 percent control standard at comparable sources — and even within the same facility when co-located with a HON source — demonstrates its practicality and appropriateness. Additionally, as stated in the EPA's proposal, the standards in Louisiana, Texas, and the HON include vapor balancing as a compliance option, which is a proven, inexpensive, and straightforward control method.

b. 40 CFR 63.1420(d)(3) Exemption

Comment: A commenter stated that there are instances where the PEPO NESHAP ceases to apply and another 40 CFR part 63 NESHAP becomes applicable, and therefore it is unnecessary for facilities already complying with a different 40 CFR part 63 NESHAP to change compliance to the PEPO NESHAP. The commenter discussed an example where some solvent removal, purification, drying, and solids handling steps

associated with a PMPU at a facility are subject to and already complying with other subparts of 40 CFR part 63, for example the MON. The commenter requested that the EPA either maintain the current definition of "affected source" or allow operations that are currently complying with another subpart of 40 CFR part 63 the option to continue to comply with these other part 63 regulations. In addition, the commenter contended that changing the applicable MACT standard involves a substantial amount of time and effort, including, but not limited to, (1) completing an applicability assessment for PEPO MACT, (2) preparing and submitting additional reports such as the Notification of Compliance Status and periodic reports, (3) revising title V operating permits to reflect that a new MACT standard is applicable to the affected source, and (4) updating compliance tracking processes at the site accordingly. Similarly, another commenter argued that the EPA should exempt facilities that have already implemented MON requirements and/or that conduct testing for applicability of MON requirements.

Response: The EPA agrees with the commenters that the EPA should not require owners and operators already subject to and complying with the MON (for reactions or processing that occur after completion of epoxide polymerization and all catalyst removal steps) to transition to the PEPO NESHAP. Allowing continued compliance with the MON is a reasonable and practical approach that avoids unnecessary regulatory burden, considering that the regulatory text previously excluded these processes from the definition of affected source. Therefore, although the EPA is finalizing the proposal to remove the exemption at 40 CFR 63.1420(d)(3), the Agency is revising the PEPO NESHAP at 40 CFR 63.1420(d)(4) to allow owners and operators to comply with the MON for reactions or processing (that emit organic HAP) that occur after completion of epoxide polymerization and all catalyst removal steps if they are currently complying

with the MON.[95] Commenters did not identify any other specific part 63 regulation, aside from the MON, with which PEPO facilities currently comply to demonstrate control of organic HAP emissions from post-polymerization reactions or processing after catalyst removal. Thus, the EPA is limiting the finalized overlap provisions at 40 CFR 63.1420(d)(4) to the MON.

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

The EPA evaluated the comments on the EPA's proposed amendments to revisions for flares used as APCDs, bypass lines on closed vent systems, maintenance vents and equipment openings, storage vessel degassing, planned routine maintenance of storage vessels, pressure vessels, surge control vessels and bottoms receivers, and the addition of butylene oxide. For the reasons explained in section III.D of the proposal preamble, the EPA finds that the flare amendments are necessary 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 requirements for bypass lines on closed vent systems, maintenance vents and equipment openings, storage vessel degassing, and planned routine maintenance of storage vessels are necessary for consistency with the requirement in *Sierra Club v. EPA* that CAA section 112 standards apply at all times. Also, the requirements for pressure vessels, surge control vessels and bottoms receivers, transfer racks, and certain reactions or processing that occur after completion of epoxide polymerization and all catalyst removal steps are appropriate standards for these emissions points, and the addition of butylene oxide to the rule is reasonable to correct the omission in table 4 of the subpart in the original NESHAP.

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[95] The EPA notes that this allowance is for sources already determined to be MON sources and, therefore, has no bearing on the MACT floor determination specific to the PEPO Production source category.

Therefore, the EPA is finalizing the proposed provisions for flares (including the addition of monitoring and operating requirements for pressure-assisted multi-point flares), finalizing standards for bypass lines on closed vent systems, maintenance vents and equipment openings, storage vessel degassing, planned routine maintenance of storage vessels, pressure vessels, surge control vessels and bottoms receivers, transfer racks, and certain reactions or processing that occur after completion of epoxide polymerization and all catalyst removal steps, and finalizing the addition of butylene oxide to the rule. More information and rationale concerning all the amendments the EPA is finalizing pursuant to CAA section 112(d)(2) and (3) and 112(h) are in the preamble to the proposed rule, in section IV.C.3 of this preamble, and in the comments and the Agency's specific responses to the comments in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry,* which is in the docket for this rulemaking.

D. Other Amendments to the PEPO NESHAP

1. What other amendments did we propose for the PEPO Production source category?

As discussed in section I.C.2 of this preamble, the 2014 petition for reconsideration requested that the EPA: (1) remove the affirmative defense provisions from the rules; (2) provide adequate opportunity to comment on the requirements associated with emissions from PRDs; (3) redo the risk assessment using updated emission factors; (4) set additional monitoring requirements for flares to reduce flaring emissions; (5) set fenceline monitoring requirements; (6) reconsider its decision not to set standards that account for developments in LDAR; and (7) use existing regulatory authority to strengthen chemical facility safety and prevent accidents. In response to the petition for reconsideration, the EPA evaluated each of the seven issues raised in the petition and proposed targeted actions accordingly. First, for issue (1), the EPA deferred to a separate rulemaking to address removal of affirmative defense in the PEPO

NESHAP.[96] Next, to address issue (2) raised in the petition for reconsideration, as outlined in section I.C.2 of this preamble, the EPA proposed soliciting public comment on the PRD requirements specified in 40 CFR 63.1434(c), which were finalized in the 2014 rule.[97] Petitioners contended that the EPA had not given them a sufficient opportunity to comment on the provisions related to PRD emissions. However, the EPA noted in the proposal that Petitioners' argument regarding the EPA's justification for allowing PEPO facilities a three-year compliance period is no longer applicable, as all affected sources (*i.e.*, both new and existing) have now been subject to the PRD requirements since March 27, 2017. To address issues (3) through (6) raised in the petition for reconsideration, as outlined in section I.C.2 of this preamble, the EPA proposed that the Agency's actions in this rulemaking would address issues (3), (4), (5), and (6) in the normal course of review of the PEPO NESHAP in accordance with CAA section 112. Finally, the EPA also proposed that issue (7), to use existing regulatory authority to strengthen chemical facility safety and prevent accidents in accordance with the U.S. Chemical Safety and Hazard Investigation Board and Executive Order 13650, is outside the scope of CAA section 112(f)(2) and 112(d)(6).

The EPA also proposed a requirement that owners or operators submit electronic copies of certain required performance test reports, flare management plans, and periodic reports through the EPA's CDX using the CEDRI. Additionally, the EPA 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. The EPA proposed that an extension may be appropriate due to outages of the EPA's CDX or CEDRI that preclude an owner or operator from accessing the system and submitting required reports. The EPA also

[96] *See* 89 FR 52425 (June 24, 2024).
[97] *See* 79 FR 17340 (Mar. 27, 2014).

proposed that an extension may be appropriate 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.

In addition, the EPA proposed ongoing performance tests (every five years) for owners and operators using a combustion, recovery, or recapture device to comply with an epoxide or organic HAP percent reduction efficiency requirement in 40 CFR 63.1425(b)(1)(i), (b)(2)(ii), (c)(1)(ii), (c)(3)(ii), or (d)(2); an epoxide concentration limitation in 40 CFR 63.1425(b)(1)(ii) or (b)(2)(iii); or an annual epoxide emission limitation in 40 CFR 63.1425(b)(1)(iii) or (b)(2)(iv).

The EPA also proposed to eliminate the option in 40 CFR 63.1427(a)(2)(ii) that exempts owners or operators using ECO as a control technique from a requirement to directly measure the concentration of unreacted epoxide when determining the batch cycle percent epoxide emission reduction; instead, the EPA proposed that owners and operators conduct the comparison of epoxide concentration using direct measurement for one product from each product class, even if uncontrolled epoxide emissions before the end of the ECO are less than 10 tpy.

The EPA proposed to refer to 40 CFR part 63, subpart F, in 40 CFR 63.1423(a) for instances where a definition in the PEPO NESHAP points to either 40 CFR part 63, subpart G or H. The EPA also proposed a new definition of "heat exchange system" at 40 CFR 63.1423(b) as well as reference clarifications to properly reference the correct HON citation for "continuous recorder," "maximum true vapor pressure," "residual," and "waste management unit." In addition, the EPA proposed a definition of "in organic HAP service" to include a heat exchange system, to be consistent with the use of "in organic HAP service" in the definition of "heat exchange system."

The EPA proposed adding monitoring requirements for owners or operators using adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated

offsite. The EPA also proposed that owners or operators of this type of APCD use dual (two or more) adsorbent beds in series and conduct monitoring of HAP or TOC on the outlet of the first adsorber bed in series using a sample port and a portable analyzer or chromatographic analysis.

Additionally, the EPA proposed that for the PEPO Production source category, the inclusion of 1-BP as an organic HAP would not have any effect on the MACT standards in the PEPO NESHAP. Finally, the EPA proposed revisions to clarify text or correct typographical errors, grammatical errors, and cross-reference errors. Section IV.E.7 of the proposal preamble discusses these editorial corrections and clarifications.

2. How did the other amendments for the PEPO Production source category change since proposal?

Regarding the issues raised in the May 2014 petition for reconsideration, as discussed in sections I.C.2 and IV.D.1 of this preamble, the EPA previously stated its intent to publish a *Federal Register* notice in response.[98] This final action serves as that notice and formally addresses all remaining issues raised in the reconsideration petition for the 2014 final rule. As a result, the EPA considers all these issues resolved.

First, for issue (1), since proposal, the EPA has finalized a separate rulemaking addressing removal of affirmative defense in the PEPO NESHAP, so the EPA considers this issue to be fully resolved.[99] The EPA received no comments on the proposed actions related to issues (2), (4), and (7), and we consider these three issues resolved.

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[98] The petitioners requested that the EPA: (1) remove the affirmative defense provisions from the rules; (2) provide adequate opportunity to comment on the requirements associated with emissions from PRDs; (3) redo the risk assessment using updated emission factors; (4) set additional monitoring requirements for flares to reduce flaring emissions; (5) set fenceline monitoring requirements; (6) reconsider its decision not to set standards that account for developments in LDAR; and (7) use existing regulatory authority to strengthen chemical facility safety and prevent accidents. *See* section I.C.2 of this preamble for more details.

[99] *See* 90 FR 42323 (Sept. 2, 2025).

Importantly, the EPA acknowledges that we initially proposed that the second residual risk review for the PEPO Production source category addressed issue (3). Although the EPA is no longer finalizing any part of that proposed second residual risk review, the Agency determines in this final rulemaking that no further action is necessary to resolve issue (3). On May 1, 2013, environmental groups filed a lawsuit against the EPA, alleging that the Agency had failed to review and, if necessary, revise emissions factors at least once every three years as required in CAA section 130.[100] In the complaint, the Plaintiffs sought to compel the EPA to expeditiously complete a review of the VOC emissions factors for industrial flares, liquid storage tanks, and wastewater collection, treatment and storage systems, and, if necessary, revise these factors. In 2015, the EPA finalized new or revised factors for NO_X, CO, and VOC for flares but did not revise factors for wastewater or tanks. The EPA has determined that none of the revisions to the emission factors are centrally relevant or bear on the HAP emissions estimates and associated findings for the residual risk review finalized in 2014 for the PEPO Production source category.[101] The final rule addressing the risk review for the PEPO Production source category used the best available data to conduct the review. The updated emissions factors would not have led the EPA to revise the HAP emissions data used in the risk assessment because the data does not specify the estimation method used (and generally, facilities would not use these emissions factors to estimate flare HAP

[100] *Air Alliance Houston, et al. v. McCarthy*, No. 1:13-cv-00621-KBJ (D.D.C.).
[101] 59 FR 17340 (Mar. 27, 2014).

emissions).[102] Additionally, no emissions data from PEPO flares was used to revise the emission factors.

With respect to issue (5), the EPA proposed fenceline monitoring requirements for the PEPO Production source category in the 2024 proposal. After soliciting and considering public comments on fenceline monitoring, the EPA concludes in this final rulemaking that it is not necessary to set a fenceline monitoring standard for the PEPO Production source category at this time, thus concluding the reconsideration of issue (5). See section IV.B.3.b of this preamble for the EPA's response to key comments on fenceline monitoring. Similarly, with respect to issue (6), the EPA proposed changes to the equipment leaks standards in the 2024 proposal. After soliciting and considering public comments on these equipment leaks standards, the EPA is finalizing changes to the equipment leaks standards for the PEPO Production source category, thus concluding the reconsideration of issue (6). See section IV.B.3.d of this preamble and the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry* for the EPA's response to comments on equipment leaks standards.

Beyond addressing the issues raised in the petition for reconsideration, the EPA is finalizing, as proposed, all the amendments described in section IV.D.1 of this preamble with no changes based on comment except minor clarifying edits to the spreadsheet reporting template for the periodic report. The final version of the template will be on the CEDRI website. The EPA also is revising the proposal in response to public comments to

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[102] For example, the Texas Commission on Environmental Quality's guidance for developing VOC (and subsequently, organic HAP) emissions inventories for flares states that "Emissions calculations for these contaminants are based on the flared gas flow rate and composition, and the appropriate destruction efficiency, which depends upon the actual flare operation." Additionally, it states, "Do not use the total hydrocarbon or VOC emission factors from AP-42, Section 13.5, to estimate emissions." *See* https://www.tceq.texas.gov/downloads/air-quality/point-source/guidance/rg-360-20-appendix-a.pdf.

limit the number of product classes requiring direct measurement. This change reflects the removal of the exemption in 40 CFR 63.1427(a)(2)(ii), which previously allowed owners or operators using ECO as a control technique to avoid directly measuring unreacted epoxide concentrations when calculating batch cycle percent epoxide emission reduction.

3. What key comments did we receive on the other amendments for the PEPO Production source category, and what are our responses?

This section provides summaries of and responses to the key comments received regarding the EPA's proposal to eliminate the option in 40 CFR 63.1427(a)(2)(ii) that exempts owners or operators using ECO as a control technique from a direct measurement requirement. The EPA did not receive many substantive comments on the other amendments discussed in this section IV.D of this preamble. The comments the EPA received regarding other amendments generally include issues related to electronic reporting, ongoing performance testing, adsorbers that cannot be regenerated and regenerative adsorbers that are regenerated offsite, and revisions that the Agency proposed for clarifying text or correcting typographical errors, grammatical errors, and cross-reference errors. The comments and the EPA's specific responses to these issues are in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking.

Comment: Some commenters opposed the EPA's proposal to remove the option in 40 CFR 63.1427(a)(2)(ii) that exempts owners or operators using ECO as a control technique from a requirement to confirm epoxide emissions reductions with direct measurements if uncontrolled epoxide emissions were less than 10 tpy. One commenter noted that the EPA did not provide any documentation justifying the change and, thus, the Agency has not provided commenters with an opportunity to comment on the EPA's

reasoning. The commenters expressed that obtaining direct measurement of unreacted epoxide in process liquids can expose operators to potentially hazardous conditions including not only the presence of unreacted epoxides but also elevated temperatures and pressures. Similarly, one commenter noted that vapor phase oxide analysis is complex, expensive, can result in safety issues, and is difficult due to the short duration of venting during batches. Additionally, the commenters expressed that some process units may produce hundreds of different products over the course of a year and requiring direct measurement for each product places an unnecessary burden on facilities. The commenters requested that the EPA allow the use of bench-scale or pilot-scale test data or historical data in addition to direct measurement. Alternatively, the commenters suggested that the EPA could require sampling for one or two representative "worst-case" product classes for direct measurement and comparison to calculated epoxide concentrations.

Response: Similar to performance tests, requiring direct measurement to verify modeled emissions reductions is an important compliance assurance measure to ensure that the emission standards are met and enforceable (*i.e.*, that ECO is achieving the required epoxide reduction, including for those with uncontrolled epoxide emissions below 10 tpy). The commenters did not explain how pilot-scale or bench-scale test data could be a sufficient substitute for direct measurement of actual operations or how scaling up these test data would affect the accuracy of the measurements. However, the EPA recognizes that direct measurement may be difficult when a PMPU may produce hundreds of products. To alleviate the burden associated with direct measurement when a PMPU is producing a wide variety of products, the EPA is finalizing an alternative for those with uncontrolled epoxide emissions below 10 tpy to limit the required direct measurement to a few representative products. Specifically, for products with the same capping epoxide (*i.e.*, the last epoxide into the reactor before the end of the epoxide feed),

owners or operators can verify the estimation method with direct measurement of three products representing the lowest, average, and highest estimated emissions at the end of the ECO. If the difference between the directly determined epoxide concentration and the calculated epoxide concentration is less than 25 percent for each product, then the selected estimation method is an acceptable alternative to direct measurement for all products produced in the reactor with the same capping epoxide. The capping epoxide is relevant because the amount of unreacted epoxide can vary considerably depending on reaction kinetics, and in general, propylene oxide reacts an order of magnitude slower than ethylene oxide at a given catalyst level, temperature, and pressure.[103] This approach is similar to an instrument calibration curve and allows owners and operators to verify that their estimation methodology works over the entire range of expected emissions for the PMPU. Verifying the estimation methodology over the range of expected conditions provides relief from having to conduct hundreds of measurements while maintaining an acceptable level of assurance of compliance with the emission standard.

4. What is the rationale for our final approach and final decisions regarding the other amendments for the PEPO Production source category?

Based on the comments received on these other amendments, the EPA is generally finalizing all proposed requirements. In a few instances, the EPA received comments that led to additional minor editorial corrections and technical clarifications in the final rule. The EPA's rationale for these corrections and technical clarifications is in section IV.D.3 of this preamble and in the document titled *Summary of Public Comments and Responses for National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production Industry*, which is in the docket for this rulemaking.

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[103] U.S. EPA (1997). Polyether Polyols Production: Basis and Purpose Document for Proposed Standards.

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

A. What are the affected facilities?

During the public comment period for the proposed rule, the EPA determined that two of the originally identified 25 facilities that the EPA considered in the proposal are no longer subject to the PEPO NESHAP, reducing the total to 23 facilities subject to the PEPO NESHAP. The list of these 23 facilities is in the document titled *List of Facilities Subject to the PEPO NESHAP, for Final Rule*, which is in the docket for this action.

B. What are the air quality impacts?

The changes in projected air quality impacts since proposal result from the change in the number of facilities that the EPA estimates are subject to the PEPO NESHAP (*see* section IV.A of this preamble), the EPA's decision to not finalize the proposal to remove the TRE index value concept for continuous process vents in organic HAP service, the EPA's decision to not finalize the proposed fenceline monitoring requirements, and the EPA's reevaluations related to EtO-specific standards covering process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater in EtO service under CAA section 112(d)(6) instead of section 112(f)(2), based on comments received (*see* section IV.B.3 of this preamble). The EPA estimates HAP and VOC emission reductions of approximately 97 and 130 tpy, respectively. The EPA projects that the EtO emission standards will reduce EtO emissions from PEPO processes by approximately 12 tpy (based on reported emissions inventories). More information about the estimated emission reductions and secondary impacts of this final action for the PEPO NESHAP is in the documents titled *Economic Impact Analysis* and *Updated Impact Calculations and Technology Review for the PEPO Production Source Category – Final Rule*, which are in the docket for this rulemaking.

C. What are the cost impacts?

This final action will cumulatively cost (in 2024 dollars) approximately $27.9 million in total capital costs and $9.81 million per year in total annualized costs (including product recovery), based on the EPA's analysis of the final action described in sections III and IV of this preamble.[104] [105] Besides the change to the number of facilities that the EPA estimates are subject to the PEPO NESHAP (*see* section IV.A of this preamble) and the Agency's revisions to reflect 2024 dollars and a 7.5 percent interest rate, the changes in projected cost impacts since proposal result from the EPA's (1) decision to not finalize proposal to remove the TRE index value concept for continuous process vents in organic HAP service, (2) decision to not finalize the proposed fenceline monitoring requirements, and (3) reevaluations related to EtO-specific standards covering process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater in EtO service under CAA section 112(d)(6) instead of section 112(f)(2), based on comments received (*see* section IV.B.3 of this preamble). More information about the estimated cost of this final action for the PEPO NESHAP is in the document titled *Updated Impact Calculations and Technology Review for the PEPO Production Source Category – Final Rule*, which is in the docket for this rulemaking.

D. What are the economic impacts?

The EPA conducted an Economic Impacts Analysis (EIA) for this final action as documented in a document titled *Economic Impact Analysis*, which is in the docket for this action. The EPA estimates the present value (PV) of the estimated costs of this final rule, discounted at a 3 percent rate over the 2026 to 2045 period, at $136 million with an

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[104] Regarding product recovery, the LDAR control options for equipment leaks and heat exchange systems can help facilities prevent the loss of valuable process fluids by detecting leaks sooner. The EPA monetizes this benefit as recovery credits by multiplying VOC emissions reductions by a VOC credit of $900 per ton. The EPA uses this recovery credit to represent the variety of chemicals used as reactants and produced at organic chemical manufacturing facilities.

[105] The annualized costs for the final rule include the costs of compliance, including those for monitoring, recordkeeping, and reporting. The EPA presents recordkeeping and reporting costs for the final rule separately in section VI.C of this preamble.

estimated equivalent annualized value (EAV) of $9.16 million without product recovery. With product recovery, the EPA estimates the PV at $135 million with an estimated EAV of $9.10 million. At a 7 percent discount rate, the PV of the final rule is $108 million and the EAV is $10.2 without product recovery. With product recovery, the PV and EAV at a 7 percent discount rate are $107 and $10.1 million, respectively. The overall difference caused by product recovery is relatively minor, reflecting approximately a 0.72 and 0.67 percent decrease in cost estimates under 3 and 7 percent discount rates, respectively.

The EPA calculated the economic impacts on small entities as the percentage of total annualized costs incurred by affected ultimate parent owners to their revenues. This ratio provides a measure of the direct economic impact to ultimate parent owners of PEPO facilities while presuming no impact on consumers. The EPA estimates that the only small business impacted by the final action will incur total annualized costs of about 0.92 percent of its revenue both with and without product recovery. The Regulatory Flexibility Act (RFA) section later in this preamble and the EIA for this final rulemaking provide more explanation of these economic impacts.

E. What are the benefits?

The EPA expects the emissions controls that this rule requires to reduce HAP emissions. HAP are airborne pollutants that can cause, or may cause, serious health effects. The EPA estimates that the amendments to the PEPO NESHAP, excluding the EtO emission standards and the new flare requirements, will reduce HAP emissions from PEPO sources by approximately 97 tpy. The EPA projects that the EtO emission standards will reduce EtO emissions from PEPO processes by approximately 12 tpy. The EPA also estimates that the amendments to the NESHAP will reduce excess emissions of HAP from flares in the PEPO Production source category by an additional 12 tpy.

Quantifying and monetizing the economic value of reducing the risk of cancer and noncancer effects is difficult due to the lack of a central estimate of cancer and noncancer

risk and the lack of estimates of the value of an avoided case of cancer (fatal and nonfatal) and morbidity effects. Due to methodology and data limitations, the EPA did not attempt to monetize the health benefits of reductions in HAP emissions in this analysis.

VI. Statutory and Executive Order Reviews

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

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

This action is not a significant regulatory action, and the EPA therefore did not submit this action to the Office of Management and Budget (OMB) for review.

B. Executive Order 14192: Unleashing Prosperity Through Deregulation

This action is not an Executive Order 14192 regulatory action because this action is not significant under Executive Order 12866.

C. Paperwork Reduction Act (PRA)

The EPA submitted the information collection activities in this rule to OMB for approval under the PRA. OMB has assigned EPA ICR number 1811.14 to the information collection request (ICR) document that the EPA prepared. 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.

The EPA is finalizing amendments to the PEPO NESHAP to add new monitoring and operational requirements for flares; add work practice standards for maintenance vents and equipment openings, storage vessel degassing, and planned routine maintenance of storage vessels; clarify regulatory provisions for vent control bypasses; add new monitoring requirements for PEPO pressure vessels; add new emission standards for PEPO surge control vessels and bottoms receivers; and add new emission

standards for PEPO transfer racks. The EPA is also finalizing control requirements for EtO emissions from process vents, storage vessels, equipment leaks, heat exchange systems, and wastewater in EtO service. In addition, the EPA is finalizing amendments to the PEPO NESHAP to add requirements for electronic reporting of performance test reports, flare management plans, and periodic reports and to make other minor clarifications and corrections. The EPA will collect this reporting information to ensure compliance with the PEPO NESHAP.

Respondents/affected entities: Owners or operators of PEPO production facilities.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart PPP).

Estimated number of respondents: 23 (includes two new respondents over the next three years).

Frequency of response: Initially, semiannually, and annually.

Total estimated burden: 8,930 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: Average annual cost is $5,610,000 (per year), which includes $4,620,000 annualized capital or operation & 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 one small entity subject to the requirements of this action is a small business. The Agency has determined that this small

business may incur total annualized costs representing 0.9 percent of its revenue. Details of this analysis are presented in the document titled *Economic Impact Analysis*, which is in the docket for this action.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million (adjusted annually for inflation) or more (in 1995 dollars) as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. The EPA estimates that costs involved in this action will not exceed $187 million in 2024 dollars ($100 million in 1995 dollars adjusted for inflation using the GDP implicit price deflator) or more in any one year.

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 facilities that the EPA has identified as being affected by this action are owned or operated by Tribal governments or located within Tribal lands. Thus, Executive Order 13175 does not apply to this action.

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

Executive Order 13045 directs Federal agencies to include an evaluation of the health and safety effects of the planned regulation on children in federal health and safety standards and explain why the regulation is preferable to potentially effective and

reasonably feasible alternatives. This action is not subject to Executive Order 13045 because it is not a significant regulatory action under section 3(f)(1) of Executive Order 12866.

However, the EPA's *Policy on Children's Health* applies to this action. The EPA did not conduct a new analysis of children's environmental health for this final action. For details on children's health, please see the discussion in the proposal preamble. The EPA notes that this action finalizes standards that are projected to reduce EtO emissions. Because EtO is a mutagenic HAP, emission reductions finalized in this action will be particularly beneficial to children.

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

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

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

This action involves technical standards. As discussed in the proposal preamble, the EPA conducted searches for the PEPO NESHAP through the Enhanced National Standards Systems Network Database managed by the American National Standards Institute (ANSI). The EPA also conducted a review of voluntary consensus standards (VCS) organizations and accessed and searched their databases. The EPA conducted searches for EPA Methods 1, 1A, 2, 2A, 2C, 2D, 2F, 2G, 3B, 4, 18, 21, 22, and 25A of 40 CFR part 60, appendix A, and EPA Methods 301 and 320 of 40 CFR part 63, appendix A. 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 ordered a copy of the standard and reviewed it as a potential equivalent method. The EPA reviewed all potential standards to determine the practicality of the VCS for this rulemaking. This review requires significant method

validation data that meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering, and policy equivalence to procedures in the EPA reference methods. The EPA may reconsider determinations of impracticality when additional information is available for particular VCS. The EPA did not identify any applicable VCS for EPA Methods 1A, 2A, 2D, 2F, 2G, 21, and 22.

The EPA incorporates by reference the following two VCS: ANSI/ASME PTC 19.10-1981—Part 10, "Flue and Exhaust Gas Analyses" as an acceptable alternative to EPA Method 3B (manual portion only) and 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. Although identified as VCS, the EPA is not incorporating by reference ASTM D6348-12, "Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy" as an acceptable alternative to EPA Method 320 because the EPA is not finalizing the proposal to eliminate the TRE index value concept in the PEPO NESHAP (which would have required use of EPA Method 320).

ANSI/ASME PTC 19.10-1981—Part 10, "Flue and Exhaust Gas Analyses" quantitatively determines the gaseous constituents of exhausts including oxygen, CO_2, CO, nitrogen, SO_2, sulfur trioxide, nitric oxide, nitrogen dioxide, hydrogen sulfide, and hydrocarbons. This method incorporates both manual and instrumental methodologies for the determination of oxygen content. The manual method segment of the oxygen determination is performed through the absorption of oxygen. This method is available at the ANSI, 1899 L Street NW, 11th Floor, Washington, DC 20036 and the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; telephone number: 1-800-843-5990; and email address: *customercare@asme.org*. See *https://wwww.ansi.org* and *https://www.asme.org*. The standard is available to

everyone at a cost determined by ANSI/ASME ($88). ANSI/ASME also offer memberships or subscriptions for reduced costs. The cost of obtaining these methods is not a significant financial burden, making the methods reasonably available.

ASTM D6420-18, "Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry" uses a direct interface gas chromatograph/mass spectrometer to measure 36 VOC and provide an on-site analysis of extracted, unconditioned, and unsaturated (at the instrument) gas samples from stationary sources. In this action, the EPA is finalizing ASTM D6420-18 as an alternative to EPA Method 18 with the following caveats:

- Affected sources must know the target compounds, and ASTM D6420-18 lists them as measurable;
- Affected sources cannot use ASTM D6420-18 for methane and ethane because the atomic mass is less than 35; and
- Affected sources cannot use ASTM D6420-18 as a total VOC method.

ASTM D6420-18 is available at ASTM International, 1850 M Street NW, Suite 1030, Washington, DC 20036. See *https://www.astm.org/*. This standard is available to everyone at a cost determined by the ASTM ($63). The ASTM also offers memberships or subscriptions that allow unlimited access to their methods. The cost of obtaining these methods is not a significant financial burden, making the methods reasonably available to stakeholders.

While the EPA identified 11 other VCS as being potentially applicable, the Agency decided not to use them because these methods are impractical as alternatives due to the lack of equivalency, documentation, and validation date and other important technical and policy considerations. The EPA has documented these search and review results in the memorandum *Voluntary Consensus Standard Results for National Emission*

Standards for Hazardous Air Pollutants: Polyether Polyols Production Industry Residual Risk and Technology Review.[106]

The EPA is finalizing amendments to 40 CFR part 63, subpart A, to address incorporations by reference. The EPA is amending 40 CFR 63.14 to reflect the ANSI and ASTM methods incorporated by reference. Under 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.[107]

K. Congressional Review Act (CRA)

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

[106] Document ID No. EPA-HQ-OAR-2023-0282-0043.
[107] 40 CFR 63.7(f) and 40 CFR 63.8(f).

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.

Lee Zeldin,
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency amends part 63 of title 40, chapter I, of the Code of Federal Regulations as follows:

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

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

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

Subpart A—General Provisions

2. Amend § 63.14 by revising paragraphs (f)(1) and (i)(96) to read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(f) * * *

(1) ANSI/ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], issued August 31, 1981; §§ 63.116(c) and (h); 63.128(a); 63.145(i); 63.309(k); 63.365(b); 63.457(k); 63.490(g); 63.772(e) and (h); 63.865(b); 63.997(e); 63.1282(d) and (g); 63.1426(c); 63.1450(a), (b), (d), (e), (f), and (g); 63.1625(b); table 5 to subpart EEEE; §§ 63.3166(a); 63.3360(e); 63.3545(a); 63.3555(a); 63.4166(a); 63.4362(a); 63.4766(a); 63.4965(a); 63.5160(d); table 4 to subpart UUUU; tables 5 and 17 to subpart XXXX; table 3 to subpart YYYY; table 5 to subpart AAAAA; § 63.7322(b); table 5 to subpart DDDDD; §§ 63.7822(b); 63.7824(e); 63.7825(b); 63.8000(d); table 4 to subpart JJJJJ; table 4 to subpart KKKKK; §§ 63.9307(c); 63.9323(a); 63.9621(b) and (c); table 4 to subpart SSSSS; tables 4 and 5 of subpart UUUUU; table 1 to subpart ZZZZZ; §§ 63.11148(e); 63.11155(e); 63.11162(f); 63.11163(g); table 4 to subpart JJJJJJ; §§ 63.11410(j); 63.11551(c); 63.11646(a); 63.11945(d).

* * * * *

(i) * * *

(96) 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 §§ 63.101(b); 63.115(g); 63.116(c); 63.126(d); 63.128(a); 63.139(c); 63.145(d) and (i); 63.150(g); 63.180(d); 63.305(c); 63.482(b); 63.485(t); 63.488(b); 63.490(c) and (e); 63.496(b); 63.500(c); 63.501(a); 63.502(j); 63.503(a) and (g); 63.525(a) and (e); 63.987(b); 63.997(e); 63.1423(b); 63.1426(c); 63.2354(b); table 5 to subpart EEEE; §§ 63.2450(j); 63.8000(d).

* * * * *

2a. Effective April 28, 2026, amend § 63.14 by revising paragraph (f)(1) to read as follows:

* * * * *

(f) * * *

(1) ANSI/ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], issued August 31, 1981; §§ 63.116(c) and (h); 63.128(a); 63.145(i); 63.309(k); 63.365(b); 63.457(k); 63.490(g); 63.772(e) and (h); 63.865(b); 63.997(e); 63.1282(d) and (g); 63.1426(c); 63.1450(a), (b), (d), (e), (f), and (g); 63.1625(b); table 5 to subpart EEEE; §§ 63.3166(a); 63.3360(e); 63.3545(a); 63.3555(a); 63.4166(a); 63.4362(a); 63.4766(a); 63.4965(a); 63.5160(d); table 4 to subpart UUUU; tables 5 and 17 to subpart XXXX; table 3 to subpart YYYY; table 5 to subpart AAAAA; § 63.7322(b); table 5 to subpart DDDDD; §§ 63.7822(b); 63.7824(e); 63.7825(b); 63.8000(d); table 4 to subpart JJJJJ; table 4 to subpart KKKKK; §§ 63.9307(c); 63.9323(a); 63.9621(b) and (c); table 4 to subpart SSSSS; table 5 of subpart UUUUU; table 1 to subpart ZZZZZ; §§ 63.11148(e); 63.11155(e); 63.11162(f); 63.11163(g); table 4 to subpart JJJJJJ; §§ 63.11410(j); 63.11551(c); 63.11646(a); 63.11945(d).

* * * * *

Subpart U—National Emission Standards for Hazardous Air Pollutant Emissions: Group I Polymers and Resins

3. Amend § 63.506 by revising paragraph (e)(6)(ii) and adding paragraph (e)(6)(iii) to read as follows:

§ 63.506 General recordkeeping and reporting provisions.

* * * * *

(e) * * *

(6) * * *

(ii) If none of the compliance exceptions in paragraphs (e)(6)(iii) through (ix) or (xiii) of this section occurred during the 6-month period, the Periodic Report required by paragraph (e)(6)(i) of this section shall be a statement that there were no compliance exceptions as described in this paragraph for the 6-month period covered by that report and that none of the activities specified in paragraphs (e)(6)(iii) through (ix) or (xiii) of this section occurred during the 6-month period covered by that report.

(iii) For an owner or operator of an affected source complying with the provisions of §§ 63.484 through 63.501 for any emission point, Periodic Reports shall include:

(A) All information specified in § 63.122(a)(4) for storage vessels, §§ 63.117(a)(3) and 63.118(f) and 63.485(s)(5) for continuous front-end process vents, § 63.492 for batch front-end process vents and aggregate batch vent streams, § 63.499 for back-end process operations, § 63.104(f)(2) for heat exchange systems, and § 63.146(c) through (g) for process wastewater.

(B) The daily average values or batch cycle daily average values of monitored parameters for all excursions, as defined in § 63.505(g) and (h). For excursions caused by lack of monitoring data, the start date and time and duration (in hours) of periods when monitoring data were not collected shall be specified.

(C) For each affected source as described in § 63.480, beginning no later than the compliance dates specified in § 63.481(n), for each excursion that is not an excused excursion, the report must include the date of the excursion, 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 excursion (including unknown cause, if applicable), as applicable, and the corrective action taken.

(D) The information in paragraphs (e)(6)(iii)(D)(1) through (5) of this section, as applicable:

(*1*) Any supplements to the Emissions Averaging Plan, as required in paragraph (e)(4)(iii) of this section;

(*2*) Notification if a process change is made such that the group status of any emission point changes from Group 2 to Group 1. The owner or operator is not required to submit a notification of a process change if that process change caused the group status of an emission point to change from Group 1 to Group 2. However, until the owner or operator notifies the Administrator that the group status of an emission point has changed from Group 1 to Group 2, the owner or operator is required to continue to comply with the Group 1 requirements for that emission point. This notification may be submitted at any time.

(*3*) Notification if one or more emission points (other than equipment leaks) or one or more EPPU is added to an affected source. The owner or operator shall submit the information contained in paragraphs (e)(6)(iii)(D)(3)(i) through (ii) of this section.

(*i*) A description of the addition to the affected source; and

(*ii*) Notification of the group status of the additional emission point or all emission points in the EPPU.

(*4*) Notification if a standard operating procedure, as defined in § 63.500(a)(2), is changed and the change has the potential for increasing the concentration of carbon disulfide in the crumb dryer exhaust. This notification shall also include a summary of the test results of the carbon disulfide concentration resulting from the new standard operating procedure. The results of the performance test must be submitted according to paragraph (i) of this section by the date the Periodic Report is submitted.

(*5*) For process wastewater streams sent for treatment pursuant to § 63.132(g), reports of changes in the identity of the treatment facility or transferee.

(E) The start date, start time, duration in hours, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.483(a), including actions taken to correct a malfunction.

* * * * *

Subpart PPP—National Emission Standards for Hazardous Air Pollutant Emissions for Polyether Polyols Production

4. Amend § 63.1420 by revising paragraph (d)(3), adding paragraph (d)(4), and revising paragraph (e)(3) introductory text to read as follows:

§ 63.1420 Applicability and designation of affected sources.

* * * * *

(d) * * *

(3) Except as specified in paragraph (d)(4) of this section, reactions or processing that occur after the epoxide polymerization is complete and after all catalyst removal steps, if any, are complete.

(4) Beginning no later than the compliance dates specified in § 63.1422(h), replace paragraph (d)(3) of this section with "Reactions or processing that occur after the epoxide polymerization is complete, and after all catalyst removal, solvent removal, purification, drying, and solids handling steps, if any, are complete. If, prior to **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, an owner or operator has submitted a notification of compliance status report to its permitting authority and made a determination that the provisions of subpart FFFF of this part are applicable to certain processes that occur after the epoxide polymerization and catalyst removal steps are complete, the owner or operator may continue to comply with subpart FFFF of this part to satisfy the requirements of this subpart for those processes."

(e) * * *

(3) *Annual applicability determination for non-PMPUs that have produced a polyether polyol.* Once per year beginning June 1, 2004, the owner or operator of each flexible operation unit that is not designated as a PMPU, but that has produced a polyether polyol at any time in the preceding 5-year period or since the date that the unit began production of any product, whichever is shorter, shall perform the evaluation described in paragraphs (e)(3)(i) through (iii) of this section. However, an owner or operator that does not intend to produce any polyether polyol product in the future, in accordance with paragraph (e)(9) of this section, is not required to perform the evaluation described in paragraphs (e)(3)(i) through (iii) of this section.

* * * * *

5. Amend § 63.1421 by revising paragraph (c) introductory text and adding paragraph (c)(5) to read as follows:

§ 63.1421 Implementation and enforcement.

* * * * *

(c) The authorities that cannot be delegated to state, local, or Tribal agencies are as specified in paragraphs (c)(1) through (5) of this section.

* * * * *

(5) Approval of an alternative to any electronic reporting to the U.S. EPA required by this subpart.

6. Amend § 63.1422 by revising paragraphs (b), (c), paragraph (d) introductory text, paragraphs (d)(5), and adding paragraph (h) to read as follows:

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

* * * * *

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

(c) Except as specified in paragraph (h) of this section, existing affected sources shall be in compliance with this subpart (except for § 63.1434 for which compliance is covered by paragraph (d) of this section) no later than June 1, 2002, as provided in § 63.6(c), unless an extension has been granted as specified in paragraph (e) of this section.

(d) Except as provided for in paragraphs (d)(1) through (6), and (h) of this section, existing affected sources shall be in compliance with § 63.1434 no later than December 1, 1999, unless an extension has been granted as specified in paragraph (e) of this section.

* * * * *

(5) Except as specified in § 63.1434(a)(7), compliance with the surge control vessel and bottoms receiver provisions of § 63.170 shall occur no later than June 1, 2002.

* * * * *

(h) All affected sources that commenced construction or reconstruction on or before December 27, 2024, must be in compliance with the provisions listed in paragraphs (h)(1) through (8) of this section upon initial start-up or on March 18, 2029, whichever is later. All affected sources that commenced construction or reconstruction after December 27, 2024, must be in compliance with the provisions listed in paragraphs (h)(1) through (8) of this section upon initial start-up, or on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, whichever is later.

(1) The provisions specified in § 63.1420(d)(4), the definition of "in ethylene oxide service" in §§ 63.1423, 63.1436, 63.1437(a) and (c)(4), and 63.1439(e)(6)(iii)(A) through (C).

(2) For process vents, the provisions specified in §§ 63.1425(f)(11), (g), and (h); 63.1426(a)(2), (b)(7), (d)(1)(iv), (e)(2)(v) and (vi), and (g), 63.1427(a)(2)(iii), 63.1428(c)(2), (d)(3), and (e)(2); 63.1429(a)(8) and (9) and (c)(3); 63.1430(d)(6) and (h)(7); table 5 to this subpart, for carbon adsorber, for outlet HAP or TOC concentration, adsorbent replacement, and breakthrough, third column; table 5 to this subpart, for all combustion, recovery, or recapture devices, for diversion to the atmosphere from a combustion, recovery, or recapture device or monthly inspections of sealed valves, item 3 in the third column; table 6 to this subpart for carbon adsorber, for outlet HAP or TOC concentration, adsorbent replacement, and breakthrough, third column; table 6 to this subpart for all combustion, recovery, or recapture devices, for diversion to the atmosphere from a combustion, recovery, or recapture device or monthly inspections of sealed valves, item 3 in the third column.

(3) For storage vessels, the provisions specified in § 63.1432(r) through (w) and table 3 to this subpart.

(4) For wastewater, the provisions specified in § 63.1433(a)(21) and (23).

(5) For equipment leaks, the provisions specified in § 63.1434(a)(2), (3), and (6).

(6) For surge control vessels and bottoms receivers, the provisions specified in § 63.1434(a)(7).

(7) For transfer racks, the provisions specified in § 63.1434(i).

(8) For heat exchange systems, the provisions specified in § 63.1435(g) and (i).

* * * * *

7. Revise § 63.1423 to read as follows:

§ 63.1423 Definitions.

(a) The following terms used in this subpart shall have the meaning given them in subparts A and F of this part as specified after each term:

Act (subpart A)
Administrator (subpart A)
Automated monitoring and recording system (subpart F)
Boiler (subpart F)
Bottoms receiver (subpart F)
Breakthrough (subpart F)
By-product (subpart F)
Car-seal (subpart F)
Closed vent system (subpart F)
Combustion device (subpart F)
Commenced (subpart A)
Compliance date (subpart A)
Continuous emission monitoring system (subpart A)
Continuous monitoring system (subpart A)
Emission standard (subpart A)
EPA (subpart A)
Equipment (subpart F)
Flow indicator (subpart F)
Fuel gas (subpart F)
Fuel gas system (subpart F)
Hard-piping (subpart F)
Impurity (subpart F)
Incinerator (subpart F)
Loading rack (subpart F)
Major source (subpart A)
Malfunction (subpart A)

Oil-water separator or organic-water separator (subpart F)
Open-ended valve or line (subpart F)
Operating permit (subpart F)
Organic monitoring device (subpart F)
Owner or operator (subpart A)
Performance evaluation (subpart A)
Performance test (subpart A)
Permitting authority (subpart A)
Plant site (subpart F)
Potential to emit (subpart A)
Pressure release (subpart F)
Pressure relief device or valve (subpart F)
Pressure vessel (subpart F)
Primary fuel (subpart F)
Process heater (subpart F)
Process unit shutdown (subpart F)
Reactor (subpart F)
Recapture device (subpart F)
Research and development facility (subpart F)
Responsible official (subpart A)
Run (subpart A)
Secondary fuel (subpart F)
Sensor (subpart F)
Specific gravity monitoring device (subpart F)
State (subpart A)
Surge control vessel (subpart F)
Temperature monitoring device (subpart F)
Test method (subpart A)
Total resource effectiveness index value (subpart F)
Treatment process (subpart F)
Visible emission (subpart A)

(b) All other terms used in this subpart shall have the meaning given them in this section.

Ancillary activities means boilers and incinerators (not used to comply with the emission limits of this subpart PPP), chillers and refrigeration systems, and other equipment and activities that are not directly involved (i.e., they operate within a closed system and materials are not combined with process fluids) in the processing of raw materials or the manufacturing of a product or isolated intermediate.

Annual average concentration, as used in conjunction with the wastewater provisions, means the flow-weighted annual average concentration and is determined by the procedures in § 63.144(b), except as provided in § 63.1433(a)(2).

Annual average flow rate, as used in conjunction with the wastewater provisions, is determined by the procedures in § 63.144(c).

Batch cycle means the step or steps, from start to finish, that occur in a batch unit operation.

Batch unit operation means a unit operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of equipment after the batch cycle ceases and prior to beginning a new batch cycle. Mass, temperature, concentration and other properties of the process may vary with time. Addition of raw material and withdrawal of product do not simultaneously occur in a batch unit operation.

Catalyst extraction means the removal of the catalyst using either solvent or physical extraction method.

Construction means the on-site fabrication, erection, or installation of an affected source. Construction also means the on-site fabrication, erection, or installation of a process unit or a combination of process units which subsequently becomes an affected source or part of an affected source due to a change in primary product.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once during approximately equal intervals of 15 minutes and recorded at the frequency specified in § 63.1439(d).

Continuous recorder is defined in § 63.101, except that when the definition in § 63.101 reads "or records 15-minute or more frequent block average values," the phrase "or records 1-hour or more frequent block average values" shall apply for purposes of this subpart.

Continuous unit operation means a unit operation where the inputs and outputs flow continuously. Continuous unit operations typically approach steady-state conditions. Continuous unit operations typically involve the simultaneous addition of raw material and withdrawal of the product.

Control technique means any equipment or process control used for capturing, recovering, or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, adsorbers, boilers, condensers, flares, incinerators, process heaters, and scrubbers, or any combination thereof. Process control includes extended cookout (as defined in this section). Condensers operating as reflux condensers that are necessary for processing, such as liquid level control, temperature control, or distillation operation, shall be considered inherently part of the process and will not be considered control techniques.

Emission point means an individual process vent, storage vessel, wastewater stream, or equipment leak.

Epoxide means a chemical compound consisting of a three-membered cyclic ether. Only emissions of epoxides listed in table 4 of this subpart (i.e., ethylene oxide, propylene oxide, butylene oxide, and epichlorohydrin) are regulated by the provisions of this subpart.

Equipment leak means emissions of organic HAP from a connector, pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, surge control vessel, bottoms receiver, or instrumentation system in organic HAP service.

Extended Cookout (ECO) means a control technique that reduces the amount of unreacted epoxides in the reactor. This is accomplished by allowing the product to react for a longer time period, thereby having less unreacted epoxides and reducing epoxides emissions that may have otherwise occurred.

Flexible operation unit means a process unit that manufactures different chemical products by periodically alternating raw materials fed to the process unit or operating conditions at the process unit. These units are also referred to as campaign plants or blocked operations.

Group 1 combination of batch process vents means, before March 18, 2029, a collection of process vents in a PMPU from batch unit operations that are associated with the use of a nonepoxide organic HAP to make or modify the product that meet all of the following conditions:

(1) Has annual nonepoxide organic HAP emissions, determined in accordance with § 63.1428(b), of 11,800 kilograms per year (kg/yr) or greater, and

(2) Has a cutoff flow rate, determined in accordance with § 63.1428(e), that is greater than or equal to the annual average flow rate, determined in accordance with § 63.1428(d).

No later than March 18, 2029, *Group 1 combination of batch process vents* means, a collection of process vents in a PMPU from batch unit operations that are associated with the use of a nonepoxide organic HAP to make or modify the product that has annual nonepoxide organic HAP emissions, determined in accordance with § 63.1428(b), of 4,536 kg/yr (10,000 pounds per year (lb/yr)) or greater.

Group 2 combination of batch process vents means a collection of process vents in a PMPU from batch unit operations that are associated with the use of a nonepoxide organic HAP to make or modify the product that is not classified as a Group 1 combination of batch process vents.

Group 1 continuous process vent means a process vent from a continuous unit operation that is associated with the use of a nonepoxide organic HAP to make or modify the product that meets all of the following conditions:

(1) Has a flow rate greater than or equal to 0.005 standard cubic meters per minute,

(2) Has a total organic HAP concentration greater than or equal to 50 parts per million by volume, and

(3) Has a total resource effectiveness index value, calculated in accordance with § 63.1428(h)(1), less than or equal to 1.0.

Group 2 continuous process vent means a process vent from a continuous unit operation that is associated with the use of a nonepoxide organic HAP to make or modify the product that is not classified as a Group 1 continuous process vent.

Group 1 storage vessel means a storage vessel that meets the applicability criteria specified in table 3 of this subpart.

Group 2 storage vessel means a storage vessel that does not fall within the definition of a Group 1 storage vessel.

Group 1 transfer rack means a transfer rack that loads material with a maximum true vapor pressure greater than or equal to 0.5 pounds per square inch absolute (3.45 kilopascal).

Group 2 transfer rack means a transfer rack that does not fall within the definition of a Group 1 transfer rack.

Group 1 wastewater stream means a process wastewater stream at an existing or new affected source that meets the criteria for Group 1 status in § 63.132(c), with the exceptions listed in § 63.1433(a)(2) for the purposes of this subpart (i.e., for organic HAP listed on table 4 of this subpart only).

Group 2 wastewater stream means any process wastewater stream at an existing affected source or new affected source that does not meet the definition (in this section) of a Group 1 wastewater stream.

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 PMPU heat exchangers that are in organic HAP service and serviced by that cooling tower, and all water lines to and from these process unit heat exchangers. For once-through systems, the heat exchange system consists of all heat exchangers that are in organic HAP service servicing an individual PMPU 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 1.0 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 the procedures specified in §63.109 are performed 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 heat exchange systems, any heat exchange system in a process that cools process fluids (liquid or gas) that are 1.0 percent or greater by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a heat exchange system, then the heat exchange system is considered to be "in ethylene oxide service" unless the procedures specified in § 63.109 are performed to demonstrate that the heat exchange system does not meet the definition of being "in ethylene oxide service." Examples of information that could suggest ethylene oxide could be present in a heat exchange system, 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 process vents, each Group 1 and Group 2 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 within the process would emit uncontrolled, ethylene oxide emissions greater than or equal to 100 lb/yr (45.4 kg/yr). If information exists that suggests ethylene oxide could be present in a Group 1 or Group 2 process vent, then the Group 1 or Group 2 process vent is considered to be "in ethylene oxide service" unless an analysis is performed as specified in § 63.109 to demonstrate that the Group 1 or Group 2 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 Group 1 or Group 2 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.

(4) For storage vessels, storage vessels of any capacity and vapor pressure storing a liquid that is at least 1.0 percent by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a storage vessel, then the storage vessel is considered to be "in ethylene oxide service" unless the procedures specified in § 63.109 are performed to demonstrate that the storage vessel does not meet the definition of being "in ethylene oxide service." The exemption for "vessels storing organic liquids that contain organic hazardous air pollutants only as impurities" listed in the definition of "storage vessel" in this section does not apply for storage vessels that may be in ethylene oxide service. Examples of information that could suggest ethylene oxide could be present in a storage vessel, 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.

(5) For wastewater streams, any wastewater stream that contains total annual average concentration of ethylene oxide greater than or equal to 10 parts per million by weight at any flow rate. If knowledge exists that suggests ethylene oxide could be present in a wastewater stream, then the wastewater stream is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in § 63.109 to demonstrate that the wastewater stream does not meet the definition of being "in ethylene oxide service." Examples of information that could suggest ethylene oxide could be present in a wastewater stream, 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.

(6) For paragraphs (1) through (5) of this definition, the following sentence in § 63.109 does not apply: ''This section applies beginning no later than the compliance dates specified in § 63.100(k)(11).'' Instead, § 63.109 applies beginning no later than the compliance dates specified in § 63.1422(h). Also, an owner or operator of an existing source is not required to comply with § 63.109(a)(1) through (6) for an initial measurement or initial performance test if a previously conducted measurement or performance test was completed on or after March 18, 2021 and the requirements specified in § 63.109(a)(7)(i) through (iii) are met.

In organic hazardous air pollutant service or in organic HAP service means that a piece of equipment or heat exchange system either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP (as defined in this section), as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service. For purposes of the definition of "heat exchange system," the term "equipment" in § 63.180(d) includes heat exchange systems. Beginning March 18, 2029, any piece of

equipment or heat exchange system that is in ethylene oxide service is also in organic HAP service.

Initial start-up means the first time a new or reconstructed affected source begins production, or, for equipment added or changed as described in § 63.1420(g), the first time the equipment is put into operation to produce a polyether polyol. Initial start-up does not include operation solely for testing equipment. Initial start-up does not include subsequent start-ups of an affected source or portion thereof following malfunctions or shutdowns or following changes in product for flexible operation units. Further, for purposes of § 63.1422, initial start-up does not include subsequent start-ups of affected sources or portions thereof following malfunctions or process unit shutdowns.

Maintenance wastewater is defined in § 63.101, except that the term "polyether polyol manufacturing process unit" shall apply whenever the term "chemical manufacturing process unit" is used. Further, the generation of wastewater from the routine rinsing or washing of equipment in batch operation between batches is not maintenance wastewater, but is considered to be process wastewater, for the purposes of this subpart.

Make or modify the product means to produce the polyether polyol by polymerization of epoxides or other cyclic ethers with compounds having one or more reactive hydrogens, and to incorporate additives (e.g., preservatives, antioxidants, or diluents) in order to maintain the quality of the finished products before shipping. Making and modifying the product for this regulation does not include grafting, polymerizing the polyol, or reacting it with compounds other than EO or PO.

Maximum true vapor pressure is defined in § 63.101, except before March 18, 2029, the terms "transfer" and "transferred" do not apply for the purposes of this subpart. On and after March 18, 2029, the terms "transfer" and "transferred" do apply for the purposes of this subpart.

New process unit means a process unit for which the construction or reconstruction commenced after September 4, 1997.

On-site or on site means, with respect to records required to be maintained by this subpart or required by another subpart referenced by this subpart, a location within the plant site where the affected source is located. On-site storage of records includes, but is not limited to, a location at the affected source or PMPU to which the records pertain or a location elsewhere at the plant site where the affected source is located.

Operating day refers to the 24-hour period defined by the owner or operator in the Notification of Compliance Status required by § 63.1439(e)(5). That 24-hour period may be from midnight to midnight or another 24-hour period. The operating day is the 24-hour period for which daily average monitoring values are determined.

Organic hazardous air pollutant(s) (organic HAP) means one or more of the chemicals listed in table 4 of this subpart, or any other chemical which:

(1) Is knowingly produced or introduced into the manufacturing process other than as an impurity; and

(2) Is listed in table 2 of 40 CFR part 63, subpart F in the HON.

Polyether polyol means a compound formed through the polymerization of EO or PO or other cyclic ethers with compounds having one or more reactive hydrogens (i.e., a hydrogen atom bonded to nitrogen, oxygen, phosphorus, sulfur, etc.) to form polyethers (i.e., compounds with two or more ether bonds). This definition of *polyether polyol* excludes cellulose ethers (such as methyl cellulose, carboxymethyl cellulose, hydroxyethyl cellulose, hydroxy ethyl cellulose, and hydroxypropyl methyl cellulose) and materials regulated under 40 CFR part 63, subparts F, G, and H (the HON), such as glycols and glycol ethers.

Polyether polyol manufacturing process unit (PMPU) means a process unit that manufactures a polyether polyol as its primary product, or a process unit designated as a

polyether polyol manufacturing unit in accordance with § 63.1420(e)(2). A polyether polyol manufacturing process unit consists of more than one unit operation. This collection of equipment includes purification systems, reactors and their associated product separators and recovery devices, distillation units and their associated distillate receivers and recovery devices, other associated unit operations, storage vessels (including pressure vessels), surge control vessels, bottoms receivers, product transfer racks, connected ducts and piping, combustion, recovery, or recapture devices or systems, and the equipment (i.e., all pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are associated with the PMPU) that are subject to the equipment leak provisions as specified in § 63.1434. Ancillary activities are not considered a process or part of any process. Quality assurance/quality control laboratories are not considered part of the process.

Pressure decay curve is the graph of the reactor pressure versus time from the point when epoxide feed is stopped until the reactor pressure is constant, indicating that most of the epoxide has reacted out of the vapor and liquid phases. This curve shall be determined with no leaks or vents from the reactor.

Primary product is defined in and determined by the procedures specified in § 63.1420(e).

Process unit means a collection of equipment assembled and connected by pipes or ducts to process raw materials and to manufacture a product.

Process vent means a point of emission from a unit operation having a gaseous stream that is discharged to the atmosphere either directly or after passing through one or more combustion, recovery, or recapture devices. Before March 18, 2029, a process vent from a continuous unit operation is a gaseous emission stream containing more than 0.005 weight-percent total organic HAP. On and after March 18, 2029, a process vent

from a continuous unit operation is a gaseous emission stream containing more than 0.005 weight-percent total organic HAP or is a gaseous emissions stream that contains a concentration of greater than or equal to 1 parts per million by volume (ppmv) undiluted ethylene oxide and that is part of a collection of vents from a process that when combined contain greater than or equal to 100 lb/yr (45.4 kg/yr) ethylene oxide. Before March 18, 2029, a process vent from a batch unit operation is a gaseous emission stream containing more than 225 kg/yr (500 lb/yr) of organic HAP emissions. On and after March 18, 2029, a process vent from a batch unit operation is a gaseous emission stream containing more than 225 kg/yr (500 lb/yr) of organic HAP emissions or is a gaseous emissions stream that contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide and that is part of a collection of vents from a process that when combined contain greater than or equal to 100 lb/yr (45.4 kg/yr) ethylene oxide. Unit operations that may have process vents are condensers, distillation units, reactors, or other unit operations within the PMPU. Process vents exclude pressure relief device discharges, gaseous streams routed to a fuel gas system(s), and leaks from equipment regulated under § 63.1434. A gaseous emission stream is no longer considered to be a process vent after the stream has been controlled and monitored in accordance with the applicable provisions of this subpart.

Process wastewater means wastewater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; equipment washes between batches in a batch process; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

Product means a compound or material which is manufactured by a process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Product class means a group of polyether polyols with a similar pressure decay curve (or faster pressure decay curves) that are manufactured within a given set of operating conditions representing the decline in pressure versus time. All products within a product class shall have an essentially similar pressure decay curve, and operate within a given set of operating conditions. These operating conditions are: a minimum reaction temperature; the number of -OH groups in the polyol; a minimum catalyst concentration; the type of catalyst (e.g., self-catalyzed, base catalyst, or acid catalyst); the epoxide ratio, or a range for that ratio; and the reaction conditions of the system (e.g., the size of the reactor, or the size of the batch).

Reactor liquid means the compound or material made in the reactor, even though the substance may be transferred to another vessel. This material may require further modifications before becoming a final product, in which case the reactor liquid is classified as an "intermediate." This material may be complete at this stage, in which case the reactor liquid is classified as a "product."

Reconstruction means the replacement of components of an affected source or of a previously unaffected stationary source that becomes an affected source as a result of the replacement, to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and

(2) It is technologically and economically feasible for the reconstructed source to meet the provisions of this subpart.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating

value), use, reuse, or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers (except reflux condensers), oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin film evaporation units. For the purposes of the monitoring, recordkeeping, or reporting requirements of this subpart, recapture devices are considered to be recovery devices.

Residual is defined in § 63.101, except that when the definition in § 63.101 uses the term "table 9 compounds," the term "organic HAP listed in table 9 to subpart G of this part" shall apply, for the purposes of this subpart.

Shutdown means the cessation of operation of an affected source, a PMPU within an affected source, a waste management unit or unit operation within an affected source, equipment required or used to comply with this subpart, or the emptying or degassing of a storage vessel. The purposes for a shutdown may include, but are not limited to, periodic maintenance, replacement of equipment, or equipment repairs. Shutdown does not include the normal periods between batch cycles. For continuous unit operations, shutdown includes transitional conditions due to changes in product for flexible operation units. For batch unit operations, shutdown does not include transitional conditions due to changes in product for flexible operation units. For purposes of the wastewater provisions, shutdown does not include the routine rinsing or washing of equipment between batch cycles.

Start-up means the setting into operation of an affected source, a PMPU within the affected source, a waste management unit or unit operation within an affected source, equipment required or used to comply with this subpart, or a storage vessel after emptying and degassing. For all processes, start-up includes initial start-up and operation solely for testing equipment. Start-up does not include the recharging of batch unit operations. For continuous unit operations, start-up includes transitional conditions due to

changes in product for flexible operation units. For batch unit operations, start-up does not include transitional conditions due to changes in product for flexible operation units.

Steady-state conditions means that all variables (temperatures, pressures, volumes, flow rates, etc.) in a process do not vary significantly with time; minor fluctuations about constant mean values may occur.

Storage vessel means a tank or other vessel that is used to store liquids that contain one or more organic HAP. Storage vessels do not include:

(1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(2) [Reserved]

(3) Except for storage vessels in ethylene oxide service, vessels with capacities smaller than 38 cubic meters;

(4) Except for storage vessels in ethylene oxide service, vessels and equipment storing and/or handling material that contains no organic HAP, or organic HAP as impurities only;

(5) Surge control vessels and bottoms receiver tanks;

(6) Wastewater storage tanks; and

(7) Storage vessels assigned to another process unit regulated under another subpart of part.

Total organic compounds (TOC) are those compounds, excluding methane and ethane, measured according to the procedures of Method 18 or Method 25A of appendices A-6 and A-7 to part 60 of this chapter, or ASTM D6420-18 (Incorporated by reference, see § 63.14) as specified in this subpart.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are assigned to a PMPU according to the procedures specified in § 63.1420(f)(1) through (5) (where the term “storage rack” is substituted with “transfer

rack"; and the date "June 1, 1999" is substituted with "**[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**") and are used to fill tank trucks and/or railcars with organic liquids that contain one or more of organic HAP. A transfer rack also includes the associated pumps, meters, shutoff valves, relief valves, and other piping and valves.

Unit operation means one or more pieces of process equipment used to make a single change to the physical or chemical characteristics of one or more process streams. Unit operations include, but are not limited to, reactors, distillation units, extraction columns, absorbers, decanters, condensers, and filtration equipment.

Vent stream, as used in reference to process vents, means the emissions from a process vent.

Waste management unit is defined in § 63.101, except that when the definition in § 63.101 uses the term "chemical manufacturing process unit," the term "PMPU" shall apply for the purposes of this subpart.

Wastewater means water that:

(1) Contains either

(i) An annual average concentration of organic HAP listed in table 4 of this subpart of at least 5 parts per million by weight and has an annual average flow rate of 0.02 liter per minute or greater, or

(ii) An annual average concentration of organic HAP listed on table 4 to this subpart of at least 10,000 parts per million by weight at any flow rate; or

(iii) Beginning March 18, 2029**,** a total annual average concentration of ethylene oxide greater than or equal to 10 parts per million by weight at any flow rate; and that

(2) Is discarded from a PMPU that is part of an affected source. Wastewater is process wastewater or maintenance wastewater.

8. Amend § 63.1425 by revising paragraph (a), introductory text of paragraphs (b) and (f), and adding paragraphs (f)(11) through (15), (g), and (h) to read as follows:

§ 63.1425 Process vent control requirements.

(a) *Applicability of process vent control requirements.* For each process vent at an affected source, the owner or operator shall comply with the provisions of this section. Owners and operators of all affected sources using epoxides in the production of polyether polyols are subject to the requirements of paragraph (b) of this section. Owners and operators subject to paragraph (b) of this section are also subject to paragraph (g) of this section for process vents in ethylene oxide service. Owners or operators are also subject to the requirements of paragraph (c) of this section only if epoxides are used in the production of polyether polyols and nonepoxide organic HAP are used to make or modify the product. Similarly, owners or operators are also subject to the requirements of paragraph (d) of this section only if epoxides are used in the production of polyether polyols and organic HAP are used in catalyst extraction. Owners and operators subject to paragraph (b), (c), (d), or (g) of this section are also subject to paragraph (h) of this section if the owner or operator chooses to designate a process vent as a maintenance vent as specified in paragraph (h) of this section. The owner or operator of an affected source where polyether polyol products are produced using tetrahydrofuran shall comply with paragraph (f) of this section.

(b) *Requirements for epoxide emissions.* The owner or operator of an affected source where polyether polyol products are produced using epoxides shall reduce epoxide emissions from process vents from batch unit operations and continuous unit operations within each PMPU in accordance with either paragraph (b)(1) or (2) of this section and if applicable, paragraph (g) of this section.

* * * * *

(f) *Requirements for process vents at PMPUs that produce polyether polyol products using tetrahydrofuran.* For each process vent in a PMPU that uses tetrahydrofuran (THF) to produce one or more polyether polyol products that is, or is part of, an affected source, the owner or operator shall comply with the HON process vent requirements in §§ 63.113 through 63.118, except as provided for in paragraphs (f)(1) through (10) of this section, and, beginning **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, except as provided for in paragraphs (f)(11) through (15) of this section.

* * * * *

(11) In §§ 63.116(g) and 63.118(a)(5) and (f)(7) substitute "For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10)," with "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h),".

(12) Substitute "as defined in § 63.101" with "as defined in § 63.1423".

(13) Substitute "For each source as defined in § 63.101, on and after July 15, 2027," with "For each affected source as described in § 63.1420(a), on and after March 18, 2029,".

(14) Substitute "§ 63.108" with "§ 63.1436".

(15) Section 63.113(k)(4) does not apply.

(g) *Process vents in ethylene oxide service.* Beginning no later than the compliance dates specified in § 63.1422(h), if a process vent is in ethylene oxide service then the owner or operator must comply with paragraph (g)(1), (2), or (3) of this section in addition to all other applicable requirements specified in this section.

(1) Reduce emissions of ethylene oxide by venting emissions through a closed vent system to a flare; or

(2) Reduce emissions of ethylene oxide by 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 process vent or to less than 100 pounds per year for all combined process vents within the process. If a combustion device is used, the ethylene oxide concentration of 1 ppmv must be corrected to 3 percent oxygen.

(3) Reduce emissions of ethylene oxide by greater than or equal to 99.9 percent by weight or to less than 100 pounds per year for all combined process vents within the process by using ECO as a control technique or by using a combination of ECO and venting emissions through a closed vent system to a control device.

(h) *Maintenance vents.* Beginning no later than the compliance dates specified in § 63.1422(h), an owner or operator may designate a process vent that is subject to the requirements in paragraph (b), (c), or (d) of this section as a maintenance vent if the vent is only used as a result of start-up, shutdown, maintenance, or inspection of equipment where equipment is emptied, depressurized, degassed, or placed into service. The owner or operator must comply with the applicable requirements in paragraphs (h)(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 (h) and the associated recordkeeping and reporting requirements in § 63.1430(a) and (h)(9), respectively. The owner or operator does not need to designate a maintenance vent as a Group 1 or Group 2 process vent (for process vents associated with nonepoxide organic HAP emissions from making or modifying product and process vents associated with affected sources that produce polyether polyols using tetrahydrofuran) nor identify maintenance vents in a Notification of Compliance Status report. [NOTE: process vents subject to the requirements in paragraph (f) of this section may also designate a process vent as a maintenance vent; and even though those standards are the same as the standards

specified in this paragraph (h), those standards are specified in the HON process vent requirements according to paragraph (f) of this section.]

(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 § 63.1436, as applicable, or using any combination of a non-flare combustion, recovery, and/or recapture device meeting the requirements in paragraph (b)(1)(i) or (ii), (b)(2)(ii) or (iii), (c)(1)(ii), (c)(3)(ii), or (d)(2) of this section, until one of the following conditions, as applicable, is met.

(i) The concentration of the vapor in the equipment served by the maintenance vent is less than 10 percent of its lower explosive limit (LEL) 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 concentration 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 concentration 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 of its LEL.

(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 (h)(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 paragraph (h)(1)(iii) of this section, the owner or operator must determine the concentration 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 paragraph (h)(1)(iii) of this section, the owner or operator 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.

9. Revise § 63.1426 to read as follows:

§ 63.1426 Process vent requirements for determining organic HAP concentration, control efficiency, and aggregated organic HAP emission reduction for a PMPU.

(a) *Use of a flare.* (1) Except as specified in paragraph (a)(2) of this section, when a flare is used to comply with § 63.1425(b)(1)(i) (in combination with other control techniques), (b)(2)(i), (c)(1)(i), (c)(3)(i), or (d)(1), the owner or operator shall comply with § 63.1437(c), and is not required to demonstrate the control efficiency for the flare, if the owner or operator chooses to assume a 98 percent control efficiency for that flare, as allowed under paragraph (e)(2)(i) of this section. In order to use only a flare to comply with § 63.1425(b)(1)(i), or to use a flare and apply a control efficiency greater than 98 percent, an owner or operator shall submit a request in accordance with § 63.6(g) in either the Precompliance Report described in § 63.1439(e)(4), or in a supplement to the precompliance report, as described in § 63.1439(e)(4)(vii).

(2) Beginning no later than the compliance dates specified in § 63.1422(h), paragraph (a)(1) of this section no longer applies and instead the owner or operator shall comply with § 63.1436 when a flare is used to comply with § 63.1425(b)(1)(i) (in combination with other control techniques), (b)(2)(i), (c)(1)(i), (c)(3)(i), or (d)(1). In order to use only a flare to comply with § 63.1425(b)(1)(i) or to use a flare and apply a control efficiency greater than 98 percent, an owner or operator shall submit a request in accordance with § 63.670(r), with exceptions noted in § 63.1436, and receive approval by the Administrator.

(b) *Exceptions to performance tests.* An owner or operator is not required to conduct a performance test when a combustion, recovery, or recapture device specified in paragraphs (b)(1) through (6) of this section is used to comply with § 63.1425(b), (c), or (d).

(1) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) A boiler or process heater where the process vent stream is introduced with the primary fuel or is used as the primary fuel.

(3) A combustion, recovery, or recapture device for which a performance test was conducted within the preceding 5-year period, using the same Methods specified in this section and either no deliberate process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes is not required to conduct an initial performance test. Subsequent performance tests shall be conducted according to § 63.1437(a). The operating parameters reported under the previous performance test shall be sufficient to meet the parameter monitoring requirements in this subpart.

(4) A boiler or process heater burning hazardous waste for which the owner or operator:

(i) Has been issued a final hazardous waste permit under part 270 of this chapter and complies with the requirements for hazardous waste burned in boilers and industrial furnaces in part 266, subpart H of this chapter;

(ii) Has certified compliance with the interim status requirements for hazardous waste burned in boilers and industrial furnaces in part 266, subpart H of this chapter;

(iii) Meets the requirement specified in paragraph (b)(4)(v) of this section, and has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements of subpart EEE of this part; or

(iv) Meets the requirement specified in paragraph (b)(4)(v) of this section, complies with subpart EEE of this part, and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.

(v) The owner and operator may not waive performance testing pursuant to § 63.1207(d)(4).

(5) A hazardous waste incinerator for which the owner or operator:

(i) Has been issued a final permit under part 270 of this chapter and complies with the requirements for incinerators in part 264, subpart O of this chapter;

(ii) Has certified compliance with the interim status requirements for incinerators in part 265, subpart O of this chapter;

(iii) Meets the requirement specified in paragraph (b)(5)(v) of this section, and has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements in subpart EEE of this part; or

(iv) Meets the requirement specified in paragraph (b)(5)(v) of this section, complies with the requirements in subpart EEE of this part, and will submit a Notification

of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.

(v) The owner and operator may not waive performance testing pursuant to § 63.1207(d)(4).

(6) Except as specified in paragraph (b)(7) of this section, combustion, recovery or recapture device (except for condensers) performance may be determined by using the design evaluation described in paragraph (f) of this section, provided that the combustion, recovery or recapture device receives less than 10 tons per year (9.1 megagrams per year) of uncontrolled organic HAP emissions from one or more PMPUs, determined in accordance with paragraph (d) of this section. If a combustion, recovery or recapture device exempted from testing in accordance with this paragraph receives more than 10 tons per year (9.1 megagrams per year) of uncontrolled organic HAP emissions from one or more PMPUs, the owner or operator shall comply with the performance test requirements in paragraph (c) of this section and before **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]** shall submit the test report in the next Periodic Report. Beginning **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER],** the test report no longer needs to be submitted with the Periodic Report and only needs to be submitted according to § 63.1439(e)(9).

(7) Beginning on the compliance dates specified in § 63.1422(h), paragraphs (b)(6) and (f) of this section do not apply. Instead, the owner or operator shall comply with the performance test requirements in paragraph (c) of this section.

(c) *Determination of organic HAP concentration and control efficiency.* Except as provided in paragraphs (a) and (b) of this section, an owner or operator using a combustion, recovery, or recapture device to comply with an epoxide or organic HAP percent reduction efficiency requirement in § 63.1425(b)(1)(i), (b)(2)(ii), (c)(1)(ii), (c)(3)(ii), or (d)(2); an epoxide concentration limitation in § 63.1425(b)(1)(ii) or

(b)(2)(ii); or an annual epoxide emission limitation in § 63.1425(b)(1)(iii) or (b)(2)(iv), shall conduct a performance test using the applicable procedures in paragraphs (c)(1) through (4) of this section. The organic HAP or epoxide concentration and percent reduction may be measured as total epoxide, total organic HAP, or as TOC minus methane and ethane according to the procedures specified. When conducting testing in accordance with this section, the owner or operator is only required to measure HAP of concern for the specific requirement for which compliance is being determined. For instance, to determine compliance with the epoxide emission requirement of § 63.1425(b), the owner or operator is only required to measure epoxide control efficiency or outlet concentration.

(1) *Sampling site location.* The sampling site location shall be determined as specified in paragraphs (c)(1)(i) and (ii) of this section.

(i) For determination of compliance with a percent reduction of total epoxide requirement in § 63.1425(b)(1)(i), (b)(2)(ii), or a percent reduction of total organic HAP requirement in § 63.1425(c)(1)(ii), (c)(3)(ii), or (d)(2), sampling sites shall be located at the inlet of the combustion, recovery, or recapture device as specified in paragraphs (c)(1)(i)(A), (B), and (C) of this section, and at the outlet of the combustion, recovery, or recapture device.

(A) For process vents from continuous unit operations, the inlet sampling site shall be determined in accordance with either paragraph (c)(1)(i)(A)(*1*) or (*2*) of this section.

(*1*) To demonstrate compliance with either the provisions for epoxide emissions in § 63.1425(b) or the provisions for nonepoxide organic HAP emissions from catalyst extraction in § 63.1425(d), the inlet sampling site shall be located after the exit from the continuous unit operation but before any recovery devices, or

(*2*) To demonstrate compliance with the requirements for nonepoxide organic HAP emissions from the use of nonepoxide organic HAP in making or modifying the product in § 63.1425(c), the inlet sampling site shall be located after all control techniques to reduce epoxide emissions and after the final nonepoxide organic HAP recovery device.

(B) For process vents from batch unit operations, the inlet sampling site shall be determined in accordance with either paragraph (c)(1)(i)(B)(*1*) or (*2*) of this section.

(*1*) To demonstrate compliance with either the provisions for epoxide emissions in § 63.1425(b) or the provisions for nonepoxide organic HAP emissions from catalyst extraction in § 63.1425(d), the inlet sampling site shall be located after the exit from the batch unit operation but before any recovery device.

(*2*) To demonstrate compliance with the requirements for nonepoxide organic HAP emissions in making or modifying the product in § 63.1425(c), the inlet sampling site shall be located after all control techniques to reduce epoxide emissions but before any nonepoxide organic HAP recovery device.

(C) If a process vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) To determine compliance with a parts per million by volume total epoxide or TOC limit in § 63.1425(b)(1)(ii) or (b)(2)(iii), the sampling site shall be located at the outlet of the combustion, recovery, or recapture device.

(2) *Frequency*. Performance tests and compliance determinations shall be conducted according to the schedule in § 63.1437(a).

(3) *Testing conditions and calculation of TOC or total organic HAP concentration.*

(i) Testing conditions shall be as specified in paragraphs (c)(3)(i)(A) through (E) of this section, as appropriate.

(A) Testing of process vents from continuous unit operations shall be conducted at maximum representative operating conditions, as described in § 63.1437(a)(1). Each test shall consist of three 1-hour runs. Gas stream volumetric flow rates shall be measured at approximately equal intervals of about 15 minutes during each 1-hour run. The organic HAP concentration (of the HAP of concern) shall be determined from samples collected in an integrated sample over the duration of each 1-hour test run, or from grab samples collected simultaneously with the flow rate measurements (at approximately equal intervals of about 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. For gas streams from continuous unit operations, the organic HAP concentration or control efficiency used to determine compliance shall be the average organic HAP concentration or control efficiency of the three test runs.

(B) Testing of process vents from batch unit operations shall be conducted at absolute worst-case conditions or hypothetical worst-case conditions, as defined in paragraphs (c)(3)(i)(B)(*1*) through (*5*) of this section. Worst-case conditions are limited to the maximum production allowed in a state or Federal permit or regulation and the conditions specified in § 63.1437(a)(1). Gas stream volumetric flow rates shall be measured at 15-minute intervals, or at least once during the emission episode. The organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of the test, or from grab samples collected simultaneously with the flow rate measurements (at approximately equal intervals of

about 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate.

(*1*) Absolute worst-case conditions are defined by the criteria presented in paragraph (c)(3)(i)(B)(*1*)(*i*) or (*ii*) of this section if the maximum load is the most challenging condition for the control device. Otherwise, absolute worst-case conditions are defined by the conditions in paragraph (c)(3)(i)(B)(*1*)(*iii*) of this section.

(*i*) The period in which the inlet to the control device will contain at least 50 percent of the maximum HAP load (in lbs) capable of being vented to the control device over any 8-hour period. An emission profile as described in paragraph (c)(3)(i)(B)(*3*)(*i*) of this section shall be used to identify the 8-hour period that includes the maximum projected HAP load.

(*ii*) A period of time in which the inlet to the control device will contain the highest HAP mass loading rate capable of being vented to the control device. An emission profile as described in paragraph (c)(3)(i)(B)(*3*)(*i*) of this section shall be used to identify the period of maximum HAP loading.

(*iii*) The period of time when the HAP loading or stream composition (including non-HAP) is most challenging for the control device. These conditions include, but are not limited to the following: periods when the stream contains the highest combined VOC and HAP load described by the emission profiles in paragraph (c)(3)(i)(B)(*3*) of this section; periods when the streams contain HAP constituents that approach limits of solubility for scrubbing media; or periods when the streams contain HAP constituents that approach limits of adsorptivity for carbon adsorption systems.

(*2*) Hypothetical worst-case conditions are simulated test conditions that, at a minimum, contain the highest hourly HAP load of emissions that would be predicted to be vented to the control device from the emissions profile described in paragraph (c)(3)(i)(B)(*3*)(*ii*) or (*iii*) of this section.

(*3*) The owner or operator shall develop an emission profile for the vent to the control device that describes the characteristics of the vent stream at the inlet to the control device under worst case conditions. The emission profile shall be developed based on any one of the procedures described in paragraphs (c)(3)(i)(B)(*3*)(*i*) through (*iii*) of this section, as required by paragraph (c)(3)(i)(B) of this section.

(*i*) The emission profile shall consider all emission episodes that could contribute to the vent stack for a period of time that is sufficient to include all processes venting to the stack and shall consider production scheduling. The profile shall describe the HAP load to the device that equals the highest sum of emissions from the episodes that can vent to the control device in any given period, not to exceed 1 hour. Emissions per episode shall be divided by the duration of the episode only if the duration of the episode is longer than 1 hour, and emissions per episode shall be calculated using the procedures specified in the following equation:

Equation 1 to Paragraph (c)(3)(i)(B)(*3*)(*i*)

$$E = \sum_{i=1}^{n} P_i MW_i \times \frac{(V)(t)}{(R)(T)} \times \frac{P_T}{P_T - \sum_{j=1}^{m} (P_j)}$$

Where:

E	=	Mass of HAP emitted.
V	=	Purge flow rate at the temperature and pressure of the vessel vapor space.
R	=	Ideal gas law constant.
T	=	Temperature of the vessel vapor space (absolute).
P_i	=	Partial pressure of the individual HAP.
P_j	=	Partial pressure of individual condensable VOC compounds (including HAP).
P_T	=	Pressure of the vessel vapor space.
MW_i	=	Molecular weight of the individual HAP.
t	=	Time of purge.
n	=	Number of HAP compounds in the emission stream.
i	=	Identifier for a HAP compound.
j	=	Identifier for a condensable compound.
m	=	Number of condensable compounds (including HAP) in the emission stream.

(*ii*) The emission profile shall consist of emissions that meet or exceed the highest emissions that would be expected under actual processing conditions. The profile shall describe equipment configurations used to generate the emission events, volatility of materials processed in the equipment, and the rationale used to identify and characterize the emission events. The emissions may be based on using compounds more volatile than compounds actually used in the process(es), and the emissions may be generated from all equipment in the process(es) or only selected equipment.

(*iii*) The emission profile shall consider the capture and control system limitations and the highest emissions that can be routed to the control device, based on maximum flow rate and concentrations possible because of limitations on conveyance and control equipment (e.g., fans, LEL alarms and safety bypasses).

(*4*) Three runs, each at a minimum of the complete duration of the batch venting episode or 1 hour, whichever is shorter, and a maximum of 8 hours, are required for performance testing. Each run shall occur over the same worst-case conditions, as defined in paragraph (c)(3)(i)(B) of this section.

(*5*) If a condenser is used to control the process vent stream(s), the worst case emission episode(s) shall represent a period of time in which a process vent from the batch cycle or combination of cycles (if more than one cycle is vented through the same process vent) will require the maximum heat removal capacity, in Btu/hr, to cool the process vent stream to a temperature that, upon calculation of HAP concentration, will yield the required removal efficiency for the entire cycle. The calculation of maximum heat load shall be based on the emission profile described in paragraph (c)(3)(i)(B)(*3*) of this section that will allow calculation of sensible and latent heat loads.

(ii) The concentration of either TOC (minus methane or ethane) or total organic HAP (of the HAP of concern) shall be calculated according to paragraph (c)(3)(ii)(A) or (B) of this section.

(A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

Equation 2 to Paragraph (c)(3)(ii)(A)

$$C_{TOC} = \sum_{i=1}^{x} \frac{\left(\sum_{j=1}^{n} C_{ji}\right)}{x}$$

Where:

C_{TOC}	=	Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.
C_{ji}	=	Concentration of sample components j of sample i, dry basis, parts per million by volume.
n	=	Number of components in the sample.
x	=	Number of samples in the sample run.

(B) The total organic HAP concentration (C_{HAP}) shall be computed according to Equation 2 to Paragraph (c)(3)(ii)(A) of this section, except that only the organic HAP species shall be summed.

(iii) The concentration of TOC or total organic HAP shall be corrected to 3 percent oxygen if a combustion device is used.

(A) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of appendix A to part 60 of this chapter or the manual method in ANSI/ASME PTC 19-10-1981—Part 10 (Incorporated by reference, see § 63.14) shall be used to determine the oxygen concentration ($\%0_{2d}$). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic HAP samples are taken.

(B) The concentration corrected to 3 percent oxygen shall be computed using the following equation:

Equation 3 to Paragraph (c)(3)(iii)(B)

$$C_c = C_m\left(\frac{17.9}{20.9 - \%O_{2d}}\right)$$

Where:

C_c = Concentration of TOC or organic HAP corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m = Concentration of TOC (minus methane and ethane) or organic HAP, dry basis, parts per million by volume.

$\%0_{2d}$ = Concentration of oxygen, dry basis, percent by volume.

(4) *Test methods.* When testing is conducted to measure emissions from an affected source, the test methods specified in paragraphs (c)(4)(i) through (iv) of this section shall be used, as applicable.

(i) For sample and velocity traverses, Method 1 or 1A of appendix A to part 60 of this chapter shall be used, as appropriate, except that references to particulate matter in Method 1A do not apply for the purposes of this subpart.

(ii) The velocity and gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of appendix A to part 60 of this chapter, as appropriate.

(iii) The concentration measurements shall be determined using the methods described in paragraphs (c)(4)(iii)(A) through (C) of this section.

(A) Method 18 of appendix A-6 to part 60 of this chapter or Method 320 of appendix A to this part may be used to determine the HAP concentration in any control device efficiency determination. ASTM D6420–18 (Incorporated by reference, see § 63.14) may also be used in lieu of Method 18 or Method 320, if the target compounds are all known and are all listed in Section 1.1 of ASTM D6420–18 as measurable; ASTM D6420–18 shall not be used for methane, ethane, or as a total VOC method.

(B) Method 25 of appendix A to part 60 of this chapter may be used to determine total gaseous nonmethane organic concentration for control efficiency determinations in combustion devices.

(C) Method 25A of appendix A to part 60 of this chapter may be used to determine the HAP or TOC concentration for control device efficiency determinations under the conditions specified in Method 25 of appendix A to part 60 of this chapter for direct measurements of an effluent with a flame ionization detector, or in demonstrating

compliance with the 20 ppmv standard. The instrument shall be calibrated on methane or the predominant HAP. If calibrating on the predominant HAP, the use of Method 25A of appendix A to part 60 of this chapter shall comply with paragraphs (c)(4)(iii)(C)(*1*) through (*3*) of this section.

(*1*) The organic HAP used as the calibration gas for Method 25A of appendix A to part 60 of this chapter shall be the single organic HAP representing the largest percent by volume.

(*2*) The use of Method 25A of appendix A to part 60 of this chapter, is acceptable if the response from the high level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(*3*) The span value of the analyzer shall be less than 100 ppmv.

(iv) Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A to part 63 to this part may be used.

(5) *Calculation of percent reduction efficiency.* The following procedures shall be used to calculate percent reduction efficiency:

(i) Test duration shall be as specified in paragraphs (c)(3)(i)(A) through (B) of this section, as appropriate.

(ii) The mass rate of either TOC (minus methane and ethane) or total organic HAP of the HAP of concern (E_i, E_o) shall be computed.

(A) The following equations shall be used:

Equation 4 to Paragraph (c)(5)(ii)(A)

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

Equation 5 to Paragraph (c)(5)(ii)(A)

$$E_o = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_o$$

Where:

C_{ij}, C_{oj} = Concentration of sample component j of the gas stream at the inlet and outlet of the combustion, recovery, or recapture device, respectively, dry basis, parts per million by volume.

E_i, E_o = Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the combustion, recovery, or recapture device, respectively, dry basis, kilogram per hour.

M_{ij}, M_{oj} = Molecular weight of sample component j of the gas stream at the inlet and outlet of the combustion, recovery, or recapture device, respectively, gram/gram-mole.

Q_i, Q_o = Flow rate of gas stream at the inlet and outlet of the combustion, recovery, or recapture device, respectively, dry standard cubic meter per minute.

K_2 = Constant, 2.494×10^{-6} (parts per million)$^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

(B) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by Method 18 of appendix A-6 to part 60 of this chapter, Method 320 of appendix A to this part, or ASTM D6420-18 (Incorporated by reference, see § 63.14) are summed using Equations 4 and 5 to Paragraph (c)(5)(ii)(A) of this section.

(C) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using Equations 4 and 5 to Paragraph (c)(5)(ii)(A) of this section.

(iii) The percent reduction in TOC (minus methane and ethane) or total organic HAP shall be calculated using the following equation:

Equation 6 to Paragraph (c)(5)(iii)

$$R = \frac{E_i - E_o}{E_i}(100)$$

Where:

R = Control efficiency of combustion, recovery, or recapture device, percent.

E_i = Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the combustion, recovery, or recapture device as calculated

under paragraph (c)(5)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

E_o = Mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the combustion, recovery, or recapture device, as calculated under paragraph (c)(5)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

(iv) If the process vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic HAP or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total organic HAP in all combusted process vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total organic HAP, respectively, exiting the combustion device.

(d) *Determination of uncontrolled organic HAP emissions.* For each process vent at a PMPU that is complying with the process vent control requirements in § 63.1425(b)(1)(i), (b)(1)(iii), (b)(2)(ii), (b)(2)(iv), (c)(1)(ii), or (d)(2) using a combustion, recovery, or recapture device, the owner or operator shall determine the uncontrolled organic HAP emissions in accordance with the provisions of this paragraph, with the exceptions noted in paragraph (d)(1) of this section. The provisions of § 63.1427(c)(1) shall be used to calculate uncontrolled epoxide emissions prior to the onset of an extended cook out.

(1) *Exemptions.* Except as specified in paragraph (d)(1)(iv) of this section, the owner or operator is not required to determine uncontrolled organic HAP emissions for process vents in a PMPU if the conditions in paragraph (d)(1)(i), (ii), or (iii) of this section are met.

(i) For PMPUs where all process vents subject to the epoxide emission reduction requirements of § 63.1425(b) are controlled at all times using a combustion, recovery, or recapture device, or extended cookout, the owner or operator is not required to determine uncontrolled epoxide emissions.

(ii) For PMPUs where the combination of process vents from batch unit operations associated with the use of nonepoxide organic HAP to make or modify the product is subject to the Group 1 requirements of § 63.1425(c)(1), the owner or operator is not required to determine uncontrolled nonepoxide organic HAP emissions for those process vents if every process vent from a batch unit operation associated with the use of nonepoxide organic HAP to make or modify the product in the PMPU is controlled at all times using a combustion, recovery, or recapture device.

(iii) For PMPUs where all process vents associated with catalyst extraction that are subject to the organic emission reduction requirements of § 63.1425(d)(2) are controlled at all times using a combustion, recovery, or recapture device, the owner or operator is not required to determine uncontrolled organic HAP emissions for those process vents.

(iv) Beginning on the compliance dates specified in § 63.1422(h), paragraphs (d)(1)(i) through (iii) of this section do not apply.

(2) *Process vents from batch unit operations.* The uncontrolled organic HAP emissions from an individual batch cycle for each process vent from a batch unit operation shall be determined using the procedures in the NESHAP for Group I Polymers and Resins (40 CFR part 63, subpart U), § 63.488(b)(1) through (9). Uncontrolled emissions from process vents from batch unit operations shall be determined after the exit from the batch unit operation but before any recovery device.

(3) *Process vents from continuous unit operations.* The uncontrolled organic HAP emissions for each process vent from a continuous unit operation in a PMPU shall be determined at the location specified in paragraph (d)(3)(i) of this section, using the procedures in paragraph (d)(3)(ii) of this section.

(i) For process vents subject to either the provisions for epoxide emissions in § 63.1425(b) or the provisions for organic HAP emissions from catalyst extraction in §

63.1425(d), uncontrolled emissions shall be determined after the exit from the continuous unit operation but before any recovery device.

(ii) The owner or operator shall determine the hourly uncontrolled organic HAP emissions from each process vent from a continuous unit operation in accordance with paragraph (c)(5)(ii) of this section, except that the emission rate shall be determined at the location specified in paragraph (d)(3)(i) of this section.

(e) *Determination of organic HAP emission reduction for a PMPU.* (1) The owner or operator shall determine the organic HAP emission reduction for process vents in a PMPU that are complying with § 63.1425(b)(1)(i), (b)(2)(ii), (c)(1)(ii), or (d)(2) using Equation 7 to Paragraph (e)(1) of this section. The organic HAP emission reduction shall be determined for each group of process vents subject to the same paragraph (i.e., paragraph (b), (c), or (d)) of § 63.1425. For instance, process vents that emit epoxides are subject to paragraph (b) of § 63.1425. Therefore, if the owner or operator of an existing affected source is complying with the 98 percent reduction requirement in § 63.1425(b)(2)(ii), the organic HAP (i.e., epoxide) emission reduction shall be determined for the group of vents in a PMPU that are subject to this paragraph.

Equation 7 to Paragraph (e)(1)

$$RED_{PMPU} = \left(\frac{\sum_{i=1}^{n} (E_{unc,\ i}) \left(\frac{R_i}{100} \right)}{\sum_{i=1}^{n} (E_{unc,\ i}) + \sum_{j=1}^{m} (E_{unc,\ j})} \right) * 100$$

Where:

RED_{PMPU} = Organic HAP emission reduction for the group of process vents subject to the same paragraph of § 63.1425, percent.

$E_{unc,\ i}$ = Uncontrolled organic HAP emissions from process vent i that is controlled using a combustion, recovery, or recapture device, or

extended cookout, kg/batch cycle for process vents from batch unit operations, kg/hr for process vents from continuous unit operations.

n = Number of process vents in the PMPU that are subject to the same paragraph of § 63.1425 and that are controlled using a combustion, recovery, or recapture device, or extended cookout.

R_i = Control efficiency of the combustion, recovery, or recapture device, or extended cookout, used to control organic HAP emissions from vent i, determined in accordance with paragraph (e)(2) of this section.

$E_{unc, j}$ = Uncontrolled organic HAP emissions from process vent j that is not controlled using a combustion, recovery, or recapture device, kg/batch cycle for process vents from batch unit operations, kg/hr for process vents from continuous unit operations.

m = Number of process vents in the PMPU that are subject to the same paragraph of § 63.1425 and that are not controlled using a combustion, recovery, or recapture device.

(2) The control efficiency, R_i, shall be assigned as specified below in paragraph (e)(2)(i), (ii), (iii), (iv), (v), or (vi) of this section.

(i) Except as specified in paragraph (e)(2)(v) of this section, if the process vent is controlled using a flare (and the owner or operator has not previously obtained approval to assume a control efficiency greater than 98 percent in accordance with § 63.6(g)) or a combustion device specified in paragraph (b)(1), (2), (4), or (5) of this section, and a performance test has not been conducted, the control efficiency shall be assumed to be 98 percent.

(ii) If the process vent is controlled using a combustion, recovery, or recapture device for which a performance test has been conducted in accordance with the provisions of paragraph (c) of this section, or for which a performance test that meets the requirements of paragraph (b)(3) of this section has been previously performed, the control efficiency shall be the efficiency determined by the performance test.

(iii) If epoxide emissions from the process vent are controlled using extended cookout, the control efficiency shall be the efficiency determined in accordance with § 63.1427(e).

(iv) Except as specified in paragraph (e)(2)(vi) of this section, if the process vent is controlled using a flare, and the owner or operator has obtained approval to assume a

control efficiency greater than 98 percent in accordance with § 63.6(g), the control efficiency shall be the efficiency approved in accordance with § 63.6(g).

(v) Beginning no later than the compliance dates specified in § 63.1422(h), if the process vent is controlled using a flare meeting the requirements specified in § 63.1436 (and the owner or operator has not previously obtained approval to assume a control efficiency greater than 98 percent in accordance with § 63.6(g)) or a combustion device specified in paragraph (b)(1), (2), (4), or (5) of this section, and a performance test has not been conducted, the control efficiency shall be assumed to be 98 percent.

(vi) Beginning no later than the compliance dates specified in § 63.1422(h), if the process vent is controlled using a flare, and the owner or operator has obtained approval to assume a control efficiency greater than 98 percent in accordance with § 63.670(r), with exceptions noted in § 63.1436, the control efficiency shall be that approved efficiency.

(f) *Design evaluation.* Except as specified in paragraph (b)(7) of this section, a design evaluation is required for those control techniques that receive less than 10 tons per year (9.1 megagrams per year) of uncontrolled organic HAP emissions from one or more PMPU, if the owner or operator has chosen not to conduct a performance test for those control techniques in accordance with paragraph (b)(6) of this section. The design evaluation shall include documentation demonstrating that the control technique being used achieves the required control efficiency under worst-case conditions, as determined from the emission profile described in § 63.1426(c)(3)(i)(B)(*3*)(*i*).

(1) Except for ECO whose design evaluation is presented in paragraph (f)(2) of this section, to demonstrate that a control technique meets the required control efficiency, a design evaluation shall address the composition and organic HAP concentration of the vent stream, immediately preceding the use of the control technique. A design evaluation shall also address other vent stream characteristics and control technique operating

parameters, as specified in any one of paragraphs (f)(1)(i) through (vi) of this section, depending on the type of control technique that is used. If the vent stream is not the only inlet to the control technique, the owner or operator shall also account for all other vapors, gases, and liquids, other than fuels, received into the control technique from one or more PMPUs, for purposes of the efficiency determination.

(i) For an enclosed combustion technique used to comply with the provisions of § 63.1425(b)(1), (c)(1), or (d), with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C, the design evaluation shall document that these conditions exist.

(ii) For a combustion control technique that does not satisfy the criteria in paragraph (f)(1)(i) of this section, the design evaluation shall document the control efficiency and address the characteristics listed in paragraphs (f)(1)(ii)(A) through (C) of this section, depending on the type of control technique.

(A) For a thermal vapor incinerator, in the design evaluation the owner or operator shall consider the autoignition temperature of the organic HAP, shall consider the vent stream flow rate, and shall establish the design minimum and average temperatures in the combustion zone and the combustion zone residence time.

(B) For a catalytic vapor incinerator, in the design evaluation the owner or operator shall consider the vent stream flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(C) For a boiler or process heater, in the design evaluation the owner or operator shall consider the vent stream flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall describe the method and location where the vent stream is introduced into the flame zone.

(iii) For a condenser, in the design evaluation the owner or operator shall consider the vent stream flow rate, relative humidity, and temperature, and shall establish the

design outlet organic HAP compound concentration level, design average temperature of the exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet. The temperature of the gas stream exiting the condenser shall be measured and used to establish the outlet organic HAP concentration.

(iv) For a carbon adsorption system that regenerates the carbon bed directly onsite as part of the control technique (such as a fixed-bed adsorber), in the design evaluation the owner or operator shall consider the vent stream flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for the carbon beds, design total regeneration stream mass or volumetric flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of the carbon. For vacuum desorption, the pressure drop shall also be included.

(v) For a carbon adsorption system that does not regenerate the carbon bed directly onsite as part of the control technique (such as a carbon canister), in the design evaluation the owner or operator shall consider the vent stream mass or volumetric flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control technique and source operating schedule.

(vi) For a scrubber, in the design evaluation the owner or operator shall consider the vent stream composition, constituent concentrations, liquid-to-vapor ratio, scrubbing liquid flow rate and concentration, temperature, and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation shall establish the design

exhaust vent stream organic compound concentration level and shall include the additional information in paragraphs (f)(1)(vi)(A) and (B) of this section for trays and a packed column scrubber.

(A) Type and total number of theoretical and actual trays.

(B) Type and total surface area of packing for entire column and for individual packed sections, if the column contains more than one packed section.

(2) For ECO, the design evaluation shall establish the minimum duration (time) of the ECO, the maximum pressure at the end of the ECO, or the maximum epoxide concentration in the reactor liquid at the end of the ECO for each product class.

(g) *Ethylene oxide compliance determination procedures.* To demonstrate compliance with the emission limits specified in § 63.1425(g) for process vents in ethylene oxide service and establish the parameter monitoring level(s), owners and operators must meet the requirements specified either paragraph (g)(1), (2), (3), or (4) of this section.

(1) Comply with § 63.124, except:

(i) Substitute "§ 63.100(k)(11)" with "§ 63.1422(h)".

(ii) Substitute "§ 63.113(j)" with "§ 63.1425(g)".

(iii) Substitute "§ 63.113(j)(1)" with "§ 63.1425(g)(1)".

(iv) Substitute "§ 63.113(j)(2)" with "§ 63.1425(g)(2) or (3)".

(v) Substitute "§ 63.108" with "§ 63.1436".

(vi) When owners or operators conduct performance tests on batch process vents using the procedures in § 63.116(c):

(A) Substitute "the schedule in § 63.103(b)(1) of subpart F of this part" with "§ 63.1437(a)".

(B) The inlet sampling site shall be located after the exit from the batch unit operation but before any recovery or control device.

(C) The minimum sampling time for each run shall be the complete duration of the batch venting episode or 1 hour, whichever is shorter, instead of that stated in § 63.116(c)(3)(i) or (c)(4)(i).

(D) For process vents from batch unit operations, performance tests shall be conducted either at absolute worst-case conditions or hypothetical worst-case conditions as specified in § 63.1437(a)(1).

(vii) If § 63.124(a)(4) refers to "5 pounds per year," then substitute it for "100 pounds per year"; otherwise, § 63.124(a)(4) applies as written.

(viii) To demonstrate compliance with § 63.124(b)(2), in lieu of an FTIR CEMS, you may choose to use a gas chromatographic CEMS meeting the requirements of Performance Specification 9 of appendix B to part 60 of this chapter. If an owner or operator uses a gas chromatographic CEMS, then the owner or operator does not need to conduct the performance testing required in § 63.124(b)(3) or the operating parameter monitoring required in paragraphs § 63.124(b)(4) through (6).

(ix) When § 63.124 refers to § 63.148:

(A) Substitute "§ 63.100(k)(10)" with "§ 63.1422(h)".

(B) Substitute "For each source as defined in § 63.101," with "For each affected source as described in § 63.1420(a),".

(C) Substitute "Except for pressure relief devices subject to § 63.165(e)(4)," with "Except for pressure relief devices subject to § 63.1434(c),".

(2) If a combination of ECO and a control device is used for reducing ethylene oxide emissions to meet the percent emission reduction requirement or total combined process vent mass emissions limit in § 63.1425(g)(3), then the owner or operator must comply with both the requirements specified in paragraph (g)(1) of this section and the requirements specified in § 63.1427.

(3) If ECO alone is used to comply with § 63.1425(g)(3) (i.e., no control devices are used to further reduce ethylene oxide emissions from a process vent already controlled by ECO), then the requirements specified in paragraphs (g)(1) and (2) of this section do not apply. Instead, the owner or operator is required to meet the requirements in § 63.1427.

(4) If an owner or operator is demonstrating compliance with the combined process vent mass emissions limit in § 63.1425(g)(2) or (3) and, within the process, some process vents are uncontrolled (i.e., neither control devices nor ECO are used to reduce ethylene oxide emissions) while others are controlled, then the owner or operator must comply with paragraph (g)(1), (2), or (3) of this section for the controlled process vents and must measure ethylene oxide from the uncontrolled process vents using the procedures specified in § 63.124(a)(2)(ii) and (iii), except:

(A) Substitute "ethylene oxide exiting the outlet of the process vent prior to any releases to the atmosphere" for "ethylene oxide entering the control device and exiting the control device".

(B) When the inlet of a control device is referenced in any parameter in Equation 1 to § 63.124(a)(2)(iii), it refers to the outlet of the process vent prior to any releases to the atmosphere.

(C) Equation 2 to § 63.124(a)(2)(iii) does not apply.

10. Revise § 63.1427 to read as follows:

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

(a) *Applicability of extended cookout requirements.* Owners or operators of affected sources that produce polyether polyols using epoxides, and that are using ECO as a control technique to reduce epoxide emissions in order to comply with percent emission reduction requirements in § 63.1425(b)(1)(i) or (b)(2)(ii), or the requirements in

§ 63.1425(g)(3), shall comply with the provisions of this section. The owner or operator that is using ECO in order to comply with the emission factor requirements in § 63.1425(b)(1)(iii) or § 63.1425(b)(2)(iv) shall demonstrate that the specified emission factor is achieved by following the requirements in § 63.1431. If additional control devices are used to further reduce the HAP emissions from a process vent already controlled by ECO, then the owner or operator shall also comply with the testing, monitoring, recordkeeping, and reporting requirements associated with the additional control device, as specified in §§ 63.1426, 63.1429, and 63.1430, respectively. For the purposes of this section, replace "epoxide" with "ethylene oxide" when ECO is used to comply with the standards in § 63.1425(g)(3).

(1) For each product class, the owner or operator shall determine the batch cycle percent epoxide emission reduction for the most difficult to control product in the product class, where the most difficult to control product is the polyether polyol that is manufactured with the slowest pressure decay curve.

(2) The owner or operator may determine the batch cycle percent epoxide emission reduction by directly measuring the concentration of the unreacted epoxide, or by using process knowledge, reaction kinetics, and engineering knowledge, in accordance with paragraph (a)(2)(i) of this section.

(i) If the owner or operator elects to use any method other than direct measurement, the epoxide concentration shall be determined by direct measurement for one product from each product class and compared with the epoxide concentration determined using the selected estimation method, with the exception noted in paragraph (a)(2)(ii) of this section. If the difference between the directly determined epoxide concentration and the calculated epoxide concentration is less than 25 percent, then the selected estimation method will be considered to be an acceptable alternative to direct measurement for that class.

(ii) Except as specified in paragraph (a)(2)(iii) of this section, if uncontrolled epoxide emissions prior to the end of the ECO are less than 10 tons per year (9.1 megagrams per year), the owner or operator is not required to perform the direct measurement required in paragraph (a)(2)(i) of this section. Uncontrolled epoxide emissions prior to the end of the ECO shall be determined by the procedures in paragraph (d)(1) of this section.

(iii) Beginning on the compliance dates specified in § 63.1422(h), paragraph (a)(2)(ii) of this section does not apply. Instead, if uncontrolled epoxide emissions prior to the end of the ECO are less than 10 tons per year (9.1 megagrams per year) and the owner or operator elects to use any method other than direct measurement, the owner or operator must comply with either paragraph (a)(2)(iii)(A) or (B) of this section.

(A) Comply with paragraph (a)(2)(i) of this section.

(B) For products with the same capping epoxide (i.e., the last epoxide into the reactor before the end of the epoxide feed), verify the estimation method with direct measurement of three products representing the lowest, median, and highest estimated emissions at the end of the ECO. If the difference between the directly determined epoxide concentration and the calculated epoxide concentration is less than 25 percent for each product, then the selected estimation method will be considered to be an acceptable alternative to direct measurement for all products using that capping epoxide.

(b) *Define the end of epoxide feed.* The owner or operator shall define the end of the epoxide feed in accordance with paragraph (b)(1) or (2) of this section.

(1) The owner or operator shall determine the concentration of epoxide in the reactor liquid at the point in time when all epoxide has been added to the reactor and prior to any venting. This concentration shall be determined in accordance with the procedures in paragraph (f)(1)(i) of this section.

(2) If the conditions in paragraphs (b)(2)(i), (ii), and (iii) of this section are met, the end of the epoxide feed may be defined by the reactor epoxide partial pressure at the point in time when all epoxide reactants have been added to the reactor. This reactor epoxide partial pressure shall be determined in accordance with the procedures in paragraph (g) of this section.

(i) No epoxide is emitted before the end of the ECO;

(ii) Extended cookout is the only control technique to reduce epoxide emissions; and

(iii) The owner or operator elects to determine the percent epoxide emission reduction for the ECO using reactor epoxide partial pressure in accordance with paragraph (e)(2) of this section.

(c) *Define the onset of the ECO.* The owner or operator shall calculate the uncontrolled emissions for the batch cycle by calculating the epoxide emissions, if any, prior to the onset of the ECO, plus the epoxide emissions at the onset of the ECO. The onset of the ECO is defined as the point in time when the combined unreacted epoxide concentration in the reactor liquid is equal to 25 percent of the concentration of epoxides at the end of the epoxide feed, which was determined in accordance with paragraph (b) of this section.

(1) The uncontrolled epoxide emissions for the batch cycle shall be determined using the following equation:

Equation 1 to Paragraph (c)(1)

$$E_{e,u} = \left(C_{liq,i}\right)\left(V_{liq,i}\right)\left(D_{liq,i}\right) + \left(C_{vap,i}\right)\left(V_{vap,i}\right)\left(D_{vap,i}\right) + \left(E_{epox,bef}\right)$$

Where:

$E_{e,u}$ = Uncontrolled epoxide emissions at the onset of the ECO, kilograms per (kg/) batch.

$C_{liq,i}$ = Concentration of epoxide in the reactor liquid at the onset of the ECO, which is equal to 25 percent of the concentration of epoxide at the end

of the epoxide feed, determined in accordance with paragraph (b)(1) of this section, weight percent.

$V_{liq, i}$ = Volume of reactor liquid at the onset of the ECO, liters.

$D_{liq, i}$ = Density of reactor liquid, kg/liter.

$C_{vap, i}$ = Concentration of epoxide in the reactor vapor space at the onset of the ECO, determined in accordance with paragraph (f)(2) of this section, weight percent.

$V_{vap, i}$ = Volume of the reactor vapor space at the onset of the ECO, liters.

$D_{vap, i}$ = Vapor density of reactor vapor space at the onset of the ECO, kg/liter.

$E_{epox, bef}$ = Epoxide emissions that occur prior to the onset of the ECO, determined in accordance with the provisions of § 63.1426(d), kilograms.

(2) If the conditions in paragraphs (b)(2)(i), (ii), and (iii) of this section are met, the owner or operator may define the onset of the ECO as the point in time when the reactor epoxide partial pressure equals 25 percent of the reactor epoxide partial pressure at the end of the epoxide feed, and is not required to determine the uncontrolled epoxide emissions in accordance with paragraph (c)(1) of this section.

(d) *Determine emissions at the end of the ECO.* The owner or operator shall calculate the epoxide emissions at the end of the ECO, where the end of the ECO is defined as the point immediately before the time when the reactor contents are emptied and/or the reactor vapor space purged to the atmosphere or to a combustion, recovery, or recapture device.

(1) The epoxide emissions at the end of the ECO shall be determined using the following equation:

Equation 2 to Paragraph (d)(1)

$$E_{e,E} = \left(C_{liq, f}\right)\left(V_{liq, f}\right)\left(D_{liq, f}\right) + \left(C_{vap, f}\right)\left(V_{vap, f}\right)\left(D_{vap, f}\right)$$

Where:

$E_{e, E}$ = Epoxide emissions at the end of the ECO, kg.

$C_{liq, f}$ = Concentration of epoxide in the reactor liquid at the end of the ECO, determined in accordance with paragraph (f)(1) of this section, weight percent.

$V_{liq, f}$ = Volume of reactor liquid at the end of the ECO, liters.

$D_{liq, f}$ = Density of reactor liquid, kg/liter.

$C_{vap, f}$ = Concentration of epoxide in the reactor vapor space as it exits the reactor at the end of the ECO, determined in accordance with paragraph (f)(2) of this section, weight percent.

$V_{vap, f}$ = Volume of the reactor vapor space as it exits the reactor at the end of the ECO, liters.

$D_{vap, f}$ = Vapor density of reactor vapor space at the end of the ECO, kg/liter.

(2) If the conditions in paragraphs (b)(2)(i), (ii), and (iii) of this section are met, the owner or operator may determine the reactor epoxide partial pressure at the end of the ECO instead of determining the uncontrolled epoxide emissions at the end of the ECO in accordance with paragraph (d)(1) of this section.

(e) *Determine percent epoxide emission reduction.* (1) The owner or operator shall determine the percent epoxide emission reduction for the batch cycle using the following equation:

Equation 3 to Paragraph (e)(1)

$$R_{batchcycle} = \left[\frac{E_{e,u} - \left(E_{e,E}\right)\left(1 - \frac{R_{addon,i}}{100}\right) - \left(E_{e,o}\right)\left(1 - \frac{R_{addon,j}}{100}\right)}{E_{e,u}} \right] * 100$$

Where:

$R_{batchcycle}$ = Epoxide emission reduction for the batch cycle, percent.

$E_{e, E}$ = Epoxide emissions at the end of the ECO determined in accordance with paragraph (d)(1) of this section, kilograms.

$R_{addon, i}$ = Control efficiency of combustion, recovery, or recapture device that is used to control epoxide emissions after the ECO, determined in accordance with the provisions of § 63.1426(c) or 63.124(a)(2)(ii) through (iv) as specified in § 63.1426(g), percent.

$E_{e, o}$ = Epoxide emissions that occur before the end of the ECO, determined in accordance with the provisions of § 63.1426(d) or 63.124(a)(2)(ii) and (iii) as specified in § 63.1426(g), kilograms.

$R_{addon, j}$ = Control efficiency of combustion, recovery, or recapture device that is used to control epoxide emissions that occur before the end of the ECO, determined in accordance with the provisions of § 63.1426(c) or 63.124(a)(2)(ii) through (iv) as specified in § 63.1426(g), percent.

$E_{e, u}$ = Uncontrolled epoxide emissions determined in accordance with paragraph (c)(1) of this section, kilograms.

(2) If the conditions in paragraphs (b)(2)(i), (ii), and (iii) of this section are met, the owner or operator may determine the percent epoxide emission reduction for the

batch cycle using reactor epoxide partial pressure and the following equation, instead of using the procedures in paragraph (e)(1) of this section.

Equation 4 to Paragraph (e)(2)

$$R_{batchcycle} = \left[1 - \frac{P_{epox,f}}{P_{epox,i}}\right] * 100$$

Where:

$R_{batchcycle}$ = Epoxide emission reduction for the batch cycle, percent.
$P_{epox, i}$ = Reactor epoxide partial pressure at the onset of the ECO, determined in accordance with paragraph (c)(2) of this section, mm Hg.
$P_{epox, f}$ = Reactor epoxide partial pressure at the end of the ECO, determined in accordance with paragraph (c)(2) of this section, mm Hg.

(f) *Determination of epoxide concentrations.* The owner or operator shall determine the epoxide concentrations in accordance with the procedures in this paragraph.

(1) The owner or operator shall determine the concentration of epoxide in the reactor liquid using either direct measurement in accordance with paragraph (f)(1)(i) of this section, or reaction kinetics in accordance with paragraph (f)(1)(ii) of this section. An owner or operator may also request to use an alternative methodology in accordance with paragraph (f)(1)(iii) of this section.

(i) The owner or operator shall submit a standard operating procedure for obtaining the liquid sample, along with the test method used to determine the epoxide concentration. This information shall be submitted in the Precompliance Report. For ethylene oxide, the test method must be as described in § 63.109(b)(1) or another alternative approved by the Administrator in accordance with § 63.7(f).

(ii) Determine the epoxide concentration in the reactor liquid using the following equation:

Equation 5 to Paragraph (f)(1)(ii)

$$C_{liq, f} = C_{liq, i}\, e^{-kt}$$

Note: This equation assumes a first order reaction with respect to epoxide concentration, where:

$C_{liq, f}$	=	Concentration of epoxide in the reactor liquid at the end of the time period, weight percent.
$C_{liq, i}$	=	Concentration of epoxide in the reactor liquid at the beginning of the time period, weight percent.
k	=	Reaction rate constant, 1/hr.
t	=	Time, hours.

(iii) If the owner/operator deems that the methods listed in paragraphs (f)(1)(i) and (ii) of this section are not appropriate for the reaction system for a PMPU, then the owner/operator may submit a request for the use of an alternative method.

(2) The owner or operator shall determine the concentration of epoxide in the reactor vapor space using either direct measurement in accordance with paragraph (f)(2)(i) of this section, or by engineering estimation in accordance with paragraph (f)(2)(ii) of this section. An owner or operator may also request to use an alternative methodology in accordance with paragraph (f)(2)(iii) of this section.

(i) The owner or operator shall take two representative samples from a bleed valve off the reactor's process vent. The owner or operator shall determine the total epoxide concentration using Method 18 of appendix A to part 60 of this chapter.

(ii) Determine the epoxide concentration in the vapor space using Raoult's Law or another appropriate phase equilibrium equation and the liquid epoxide concentration, determined in accordance with paragraph (f)(1) of this section.

(iii) If the owner/operator deems that the methods listed in paragraphs (f)(1)(i) and (ii) of this section are not appropriate for the reaction system for a PMPU, then the owner/operator may submit a request for the use of an alternative method.

(g) *Determination of pressure.* The owner or operator shall determine the total pressure of the system using standard pressure measurement devices calibrated according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(h) *Determination if pressure decay curves are similar.* The owner or operator shall determine the pressure decay curve as defined in § 63.1423. Products with similar pressure decay curves constitute a product class. To determine if two pressure decay curves are similar when the pressure decay curves for products have different starting and finishing pressures, the owner or operator shall determine the time when the pressure has fallen to half its total pressure by using the following equation:

Equation 6 to Paragraph (h)

$$\text{Time}\left(P_{half}1\right) - \text{Time}\left(P_{half}2\right) < 20\%\ T_{AVG}$$

Where:

$P_{half}1$ = Half the total pressure of the epoxide for product 1.
Time ($P_{half}1$) = Time when the pressure has fallen to half its total pressure for product 1.
$P_{half}2$ = Half the total pressure of the epoxide for product 2.
Time ($P_{half}2$) = Time when the pressure has fallen to half its total pressure for product 2.
T_{AVG} = The average time to cookout to the point where the epoxide pressure is 25 percent of the epoxide pressure at the end of the feed step for products 1 and 2.

(i) *ECO monitoring requirements.* The owner or operator using ECO shall comply with the monitoring requirements of this paragraph to demonstrate continuous compliance with this subpart. Paragraphs (i)(1) through (3) of this section address monitoring of the extended cookout.

(1) To comply with the provisions of this section, the owner or operator shall monitor one of the parameters listed in paragraphs (i)(1)(i) through (iii) of this section, or may utilize the provision in paragraph (i)(1)(iv) of this section.

(i) Time from the end of the epoxide feed;

(ii) The epoxide partial pressure in the closed reactor;

(iii) Direct measurement of epoxide concentration in the reactor liquid at the end of the ECO, when the reactor liquid is still in the reactor, or after the reactor liquid has been transferred to another vessel; or

(iv) An owner or operator may submit a request to the Administrator to monitor a parameter other than the parameters listed in paragraphs (i)(1)(i) through (iii) of this section, as described in § 63.1439(f).

(2) During the determination of the percent epoxide emission reduction in paragraphs (b) through (e) of this section, the owner or operator shall establish, as a level that shall be maintained during periods of operation, one of the parameters in paragraphs (i)(2)(i) through (iii) of this section, or may utilize the procedure in paragraph (i)(2)(iv) of this section, for each product class, or for each product if complying with paragraph (a)(2)(iii)(B) of this section.

(i) The time from the end of the epoxide feed to the end of the ECO;

(ii) The reactor epoxide partial pressure at the end of the ECO;

(iii) The epoxide concentration in the reactor liquid at the end of the ECO, when the reactor liquid is still in the reactor, or after the reactor liquid has been transferred to another vessel; or

(iv) An owner or operator may submit a request to the Administrator to monitor a parameter other than the parameters listed in paragraphs (i)(2)(i) through (iii) of this section, as described in § 63.1439(f).

(3) For each batch cycle where ECO is used to reduce epoxide emissions, the owner or operator shall record the value of the monitored parameter at the end of the ECO. This parameter is then compared with the level established in accordance with paragraph (i)(2) of this section to determine if an excursion has occurred. An ECO excursion is defined as one of the situations described in paragraphs (i)(3)(i) through (v) of this section.

(i) When the time from the end of the epoxide feed to the end of the ECO is less than the time established in paragraph (i)(2)(i) of this section;

(ii) When the reactor epoxide partial pressure at the end of the ECO is greater than the partial pressure established in paragraph (i)(2)(ii) of this section;

(iii) When the epoxide concentration in the reactor liquid at the end of the ECO is greater than the epoxide concentration established in paragraph (i)(2)(iii) of this section;

(iv) When the parameter is not measured and recorded at the end of the ECO; or

(v) When the alternative monitoring parameter is outside the range established under § 63.1439(f) for proper operation of the ECO as a control technique.

(j) *Recordkeeping requirements.* (1) The owner or operator shall maintain the records specified in paragraphs (j)(1)(i) and (ii) of this section, for each product class. The owner or operator shall also maintain the records related to the initial determination of the percent epoxide emission reduction specified in paragraphs (j)(1)(iii) through (xi) of this section, as applicable, for each product class.

(i) Operating conditions of the product class, including:

(A) Pressure decay curve;

(B) Minimum reaction temperature;

(C) Number of reactive hydrogens in the raw material;

(D) Minimum catalyst concentration;

(E) Ratio of EO/PO at the end of the epoxide feed; and

(F) Reaction conditions, including the size of the reactor or batch.

(ii) A listing of all products in the product class, along with the information specified in paragraphs (j)(1)(i)(A) through (F) of this section, for each product. When complying with paragraph (a)(2)(iii)(B) of this section, note the capping epoxide for each product.

(iii) The concentration of epoxide at the end of the epoxide feed, determined in accordance with paragraph (b)(1) of this section.

(iv) The concentration of epoxide at the onset of the ECO, determined in accordance with paragraph (c) of this section.

(v) The uncontrolled epoxide emissions at the onset of the ECO, determined in accordance with paragraph (c)(1) of this section. The records shall also include all the background data, measurements, and assumptions used to calculate the uncontrolled epoxide emissions.

(vi) The epoxide emissions at the end of the ECO, determined in accordance with paragraph (d)(1) of this section. The records shall also include all the background data, measurements, and assumptions used to calculate the epoxide emissions.

(vii) The percent epoxide reduction for the batch cycle, determined in accordance with paragraph (e)(1) of this section. The records shall also include all the background data, measurements, and assumptions used to calculate the percent reduction.

(viii) The parameter level, established in accordance with paragraph (i)(3) of this section.

(ix) If epoxide emissions occur before the end of the ECO, the owner or operator shall maintain records of the time and duration of all such emission episodes that occur during the initial demonstration of batch cycle efficiency.

(x) If the conditions in paragraphs (b)(2)(i), (ii), and (iii) of this section are met, the owner or operator is not required to maintain the records specified in paragraphs (j)(1)(iii) through (iv) of this section, but shall maintain the records specified in paragraphs (j)(1)(x)(A), (B), and (C) of this section.

(A) The reactor epoxide partial pressure at the following times:

(*1*) At end of the epoxide feed, determined in accordance with paragraph (b)(2) of this section;

(*2*) At the onset of the ECO, established in accordance with paragraph (c)(2) of this section; or

(*3*) At the end of the ECO, determined in accordance with paragraph (d)(2) of this section.

(B) The percent epoxide reduction for the batch cycle, determined in accordance with paragraph (e)(2) of this section. The records shall also include all the measurements and assumptions used to calculate the percent reduction.

(C) The reactor epoxide partial pressure at the end of the ECO.

(xi) For each product class, the product that was determined to be the most difficult to control and how that determination was made. When complying with paragraph (a)(2)(iii)(B) of this section, the three products used to verify the estimation method for each capping epoxide and how those products were chosen as representative of the lowest, median, and highest estimated emissions. For each verification, keep a record of the difference between the directly determined concentration and the calculated concentration using the estimation method.

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

(i) For each batch cycle, the product being produced and the product class to which it belongs. When complying with paragraph (a)(2)(iii)(B) of this section, note the capping epoxide for the product produced.

(ii) For each batch cycle, the owner or operator shall record the value of the parameter monitored in accordance with paragraph (i)(3) of this section.

(iii) If a combustion, recovery, or recapture device is used to reduce emission in conjunction with ECO, the owner or operator shall record the information specified in § 63.1430(d) and comply with the monitoring provisions in § 63.1429 or § 63.124 as specified in § 63.1426(g).

(iv) [Reserved]

(v) If epoxide emissions occur before the end of the ECO, the owner or operator shall maintain records of the time and duration of all such emission episodes.

(k) *Reporting requirements*. The owner or operator shall comply with the reporting requirements in this paragraph.

(1) The information specified in paragraphs (k)(1)(i) through (ii) of this section shall be provided in the Precompliance Report, as specified in § 63.1439(e)(4).

(i) A standard operating procedure for obtaining the reactor liquid sample and a method that will be used to determine the epoxide concentration in the liquid, in accordance with paragraph (f)(1)(i) of this section.

(ii) A request to monitor a parameter other than those specified in paragraph (i)(1)(i), (ii), or (iii) of this section, as provided for in paragraph (i)(1)(iv) of this section.

(2) The information specified in paragraphs (k)(2)(i) through (iv) of this section shall be provided in the Notification of Compliance Status, as specified in § 63.1439(e)(5).

(i) For each product class, the information specified in paragraphs (k)(2)(i)(A) through (C) of this section.

(A) The operating conditions of this product class, as specified in paragraph (j)(1)(i) of this section.

(B) A list of all products in the product class. When complying with paragraph (a)(2)(iii)(B) of this section, note the capping epoxide for each product.

(C) The percent epoxide emission reduction, determined in accordance with paragraph (e) of this section.

(ii) The parameter for each product class, as determined in accordance with paragraph (i)(2) of this section.

(iii) If a combustion, recovery, or recapture device is used in addition to ECO to reduce emissions, the information specified in § 63.1430(g)(1).

(iv) If epoxide emissions occur before the end of the ECO, a listing of the time and duration of all such emission episodes that occur during the initial demonstration of batch cycle efficiency.

(3) The information specified in paragraphs (k)(3)(i) through (iii) of this section shall be provided in the Periodic Report, as specified in § 63.1439(e)(6).

(i) Reports of each batch cycle for which an ECO excursion occurred, as defined in paragraph (i)(3) of this section. At a minimum, include an identification of the PMPU as well as the start date and time of the batch cycle and the type of excursion in the Periodic Report. When the excursion is caused by a parameter exceedance, specify the operating parameter, the applicable limit, and the value of the monitored parameter at the end of the ECO.

(ii) Notification of each batch cycle when the time and duration of epoxide emissions before the end of the ECO, recorded in accordance with paragraph (j)(2)(v) of this section, exceed the time and duration of the emission episodes during the initial epoxide emission percentage reduction determination, as recorded in paragraph (j)(1)(viii) of this section. At a minimum, include an identification of the PMPU as well as the start date and time of the batch cycle in the Periodic Report.

(iii) If a combustion, recovery, or recapture device is used to reduce emissions, the information specified in § 63.1430(h).

(l) *New polyether polyol products.* If an owner or operator wishes to utilize ECO as a control option for a polyether polyol not previously assigned to a product class and reported to the Agency in accordance with either paragraph (k)(2)(i)(B), (l)(1)(ii), or (l)(2)(iii) of this section, the owner or operator shall comply with the provisions of paragraph (l)(1) or (2) of this section.

(1) If the operating conditions of the new polyether polyol are consistent with the operating conditions for an existing product class, the owner or operator shall comply with the requirements in paragraphs (l)(1)(i) and (ii) of this section.

(i) The owner or operator shall update the list of products for the product class required by paragraph (j)(1)(ii) of this section, and shall record the information in paragraphs (j)(1)(i)(A) through (F) of this section for the new product.

(ii) Within 180 days after the production of the new polyether polyol, the owner or operator shall submit a report updating the product list previously submitted for the product class. This information may be submitted along with the next Periodic Report.

(2) If the operating conditions of the new polyether polyol do not conform with the operating characteristics of an existing product class, the owner or operator shall establish a new product class and shall comply with provisions of paragraphs (l)(2)(i) through (iii) of this section.

(i) The owner or operator shall establish the batch cycle percent epoxide emission reduction in accordance with paragraphs (b) through (g) of this section for the product class.

(ii) The owner or operator shall establish the records specified in paragraph (j)(1) of this section for the product class.

(iii) Within 180 days of the production of the new polyether polyol, the owner or operator shall submit a report containing the information specified in paragraphs (k)(2)(i) and (ii) of this section.

(m) *Polyether polyol product changes.* If a change in operation, as defined in paragraph (m)(1) of this section, occurs for a polyether polyol that has been assigned to a product class and reported to the Agency in accordance with paragraph (k)(2)(i)(B), (l)(1)(ii), or (l)(2)(iii) of this section, the owner or operator shall comply with the provisions of paragraphs (m)(2) through (3) of this section.

(1) A change in operation for a polyether polyol is defined as a change in any one of the parameters listed in paragraphs (m)(1)(i) through (ix) of this section.

(i) A significant change in reaction kinetics;

(ii) Use of a different oxide reactant;

(iii) Use of a different EO/PO ratio;

(iv) A lower reaction temperature;

(v) A lower catalyst feed on a mole/mole fraction OH basis;

(vi) A shorter cookout;

(vii) A lower reactor pressure;

(viii) A different type of reaction, (e.g., a self-catalyzed vs. catalyzed reaction); or

(ix) A marked change in reaction conditions (e.g., a markedly different liquid level).

(2) If the operating conditions of the product after the change in operation remain within the operation conditions of the product class to which the product was assigned, the owner or operator shall update the records specified in paragraphs (j)(1)(i)(A) through (F) of this section for the product.

(3) If the operating conditions of the product after the change in operation are outside of the operating conditions of the product class to which the product was assigned, the owner or operator shall comply with the requirements in paragraph (m)(3)(i) or (ii) of this section, as appropriate.

(i) If the new operating conditions of the polyether polyol are consistent with the operating conditions for another existing product class, the owner or operator shall comply with the requirements in paragraphs (m)(3)(i)(A) and (B) of this section.

(A) The owner or operator shall update the list of products for the product class that the product is leaving, and for the product class that the product is entering, and shall

record the new information in paragraphs (j)(1)(i)(A) through (F) of this section for the product.

(B) Within 180 days after the change in operating conditions for the polyether polyol product, the owner or operator shall submit a report updating the product lists previously submitted for the product class. This information may be submitted along with the next Periodic Report.

(ii) If the new operating conditions of the polyether polyol product do not conform with the operating characteristics of an existing product class, the owner or operator shall establish a new product class and shall comply with provisions of paragraphs (m)(3)(ii)(A) through (C) of this section.

(A) The owner or operator shall establish the batch cycle percent epoxide emission reduction in accordance with paragraphs (b) through (g) of this section for the product class.

(B) The owner or operator shall establish the records specified in paragraph (j)(1) of this section for the product class.

(C) Within 180 days of the change in operating conditions for the polyether polyol, the owner or operator shall submit a report containing the information specified in paragraphs (k)(2)(i) and (ii) of this section.

11. Amend § 63.1428 by revising paragraph (a) introductory text, and paragraphs (c), (d), and (e) to read as follows:

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

(a) *Process vents from batch unit operations.* The owner or operator shall determine, for each PMPU located at an affected source, if the combination of all process vents from batch unit operations that are associated with the use of nonepoxide organic HAP to make or modify the product is a Group 1 combination of batch process vents, as

defined in § 63.1423. The annual uncontrolled nonepoxide organic HAP emissions, determined in accordance with paragraph (b) of this section, and annual average flow rate, determined if applicable in accordance with paragraph (c) of this section, shall be determined for all process vents from batch unit operations associated with the use of a nonepoxide organic HAP to make or modify the product, with the exception of those vents specified in paragraph (i) of this section, at the location after all applicable control techniques have been applied to reduce epoxide emissions in accordance with paragraph (a)(1) or (2) of this section.

* * * * *

(c) *Minimum emission level exemption.* (1) Except as specified in paragraph (c)(2) of this section, if the annual emissions of TOC or nonepoxide organic HAP from the combination of process vents from batch unit operations that are associated with the use of nonepoxide organic HAP to make or modify a polyether polyol for a PMPU are less than 11,800 kg/yr, the owner or operator of that PMPU is not required to comply with the provisions in paragraphs (d) and (e) of this section.

(2) Beginning no later than the compliance dates specified in § 63.1422(h), paragraph (c)(1) of this section no longer applies.

(d) *Determination of average flow rate and annual average flow rate.* Except as specified in paragraph (d)(3) of this section, the owner or operator shall determine, for each PMPU, the total annual average flow rate for the combination of all process vents from batch unit operations that are associated with the use of a nonepoxide organic HAP to make or modify a product in accordance with paragraphs (d)(1) and (2) of this section.

(1) The annual average flow rate for each process vent from batch unit operations that is associated with the use of nonepoxide organic HAP to make or modify the product

shall be determined using the batch process vent procedures in the NESHAP for Group I Polymers and Resins (40 CFR part 63, subpart U), § 63.488(e).

(2) The owner or operator shall sum the annual average flow rates from the individual process vents from batch unit operations in a PMPU, determined in accordance with paragraph (d)(1) of this section, to obtain the total annual average flow rate for the combination of process vents associated with the use of a nonepoxide organic HAP to make or modify the product, for the PMPU.

(3) Beginning no later than the compliance dates specified in § 63.1422(h), paragraphs (d)(1) and (2) of this section no longer apply.

(e) *Determination of cutoff flow rate.* (1) Except as specified in paragraph (e)(2) of this section, for each PMPU at an affected source that uses nonepoxide organic HAP to make or modify the product, the owner or operator shall calculate the cutoff flow rate using the following equation:

Equation 1 of Paragraph (e)(1)

$$CFR = (0.00437)(AE) - 51.6$$

Where:

CFR	=	Cutoff flow rate, standard cubic meters per minute (scmm).
AE	=	Annual TOC or nonepoxide organic HAP emissions from the combination of process vents from batch unit operations that are associated with the use of nonepoxide organic HAP to make or modify the product, as determined in paragraph (b)(2) of this section, kg/yr.

(2) Beginning no later than the compliance dates specified in § 63.1422(h), paragraph (e)(1) of this section no longer applies.

* * * * *

12. Amend § 63.1429 by revising paragraphs (a)(2) and (6), adding paragraphs (a)(8) and (9), and revising paragraph (c) to read as follows:

§ 63.1429 Process vent monitoring requirements.

(a) * * *

(2) Except as specified in paragraph (a)(8) of this section, where a flare is used, the following monitoring equipment is required: a device (including but not limited to a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame.

* * * * *

(6) Except as specified in paragraph (a)(9) of this section, where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of + 10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle, and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle are required.

* * * * *

(8) Beginning no later than the compliance dates specified in § 63.1422(h), paragraph (a)(2) of this section no longer applies and instead the owner or operator of the affected source shall comply with § 63.1436 for the flare.

(9) Beginning no later than the compliance dates specified in § 63.1422(h), if the owner or operator vents emissions through a closed vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then the owner or operator shall install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (a)(9)(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 TOC concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (a)(9)(iii)(B) of this

section. The owner or operator shall measure the concentration of HAP or TOC using either a portable analyzer, in accordance with Method 21 of appendix A–7 to part 60 of this chapter using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of appendix A–7 to part 60 of this chapter using methane, propane, or the primary HAP being controlled as the calibration gas.

(iii) Comply with paragraph (a)(9)(iii)(A) of this section, and comply with the monitoring frequency according to paragraph (a)(9)(iii)(B) of this section.

(A) The first adsorber in series shall be replaced immediately when breakthrough, as defined in § 63.1423, 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 (a)(9)(iii)(A), "immediately" means within eight 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. The owner or operator shall monitor at the outlet of the first adsorber within three days of replacement to confirm it is performing properly.

(B) Based on the adsorber bed life established according to paragraph (a)(9)(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 two months of life remaining, at least weekly if the adsorbent has between two months and two weeks of life remaining, and at least daily if the adsorbent has two weeks or less of life remaining.

* * * * *

(c) *Monitoring of bypass lines.* The owner or operator of a process vent using a process vent system that contains bypass lines that could divert a process vent stream away from the combustion, recovery, or recapture device used to comply with the process vent control requirements in § 63.1425(b), (c), or (d) shall comply with paragraphs (c)(1) or (2), and (3) of this section. Except as specified in paragraph (c)(3) of this section,

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

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once at approximately equal intervals of about 15 minutes. Records shall be generated as specified in the process vent reporting and recordkeeping provisions in § 63.1430(d)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert emissions away from the combustion, recovery, or recapture device and to the atmosphere; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and emissions are not diverted through the bypass line. Records shall be generated as specified in the process vent reporting and recordkeeping provisions in § 63.1430(d)(4)(i).

(3) Beginning no later than the compliance dates specified in § 63.1422(h):

(i) The use of a bypass line at any time on a closed vent system to divert emissions (subject to the emission standards in § 63.1425) to the atmosphere or to a control device not meeting the requirements specified in this subpart is an emissions standards violation.

(ii) The last sentence in paragraph (c) of this section no longer applies. Instead, the exemptions specified in paragraphs (c)(3)(ii)(A) and (B) of this section apply.

(A) Except for pressure relief devices subject to § 63.1434(c), equipment such as low leg drains and equipment subject to the requirements of subpart H of this part are not subject to paragraph (c) of this section.

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

* * * * *

13. Revise § 63.1430 to read as follows:

§ 63.1430 Process vent reporting and recordkeeping requirements.

(a) *Maintenance vent compliance records.* For each maintenance vent opening subject to the requirements of § 63.1425(h), owners and operators must keep the applicable records specified in paragraphs (a)(1) through (5) of this section.

(1) Owners and operators 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 § 63.1425(h). 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 § 63.1425(h)(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 § 63.1425(h)(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 § 63.1425(h)(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 (a)(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 (a)(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 § 63.1425(h)(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.

(b) *Records to demonstrate compliance.* The owner or operator complying with the process vent control requirements in § 63.1425(b), (c), or (d) shall keep the following records, as applicable, readily accessible:

(1) For flares complying with § 63.11(b) to comply with the process vent control requirements in § 63.1425(b)(2)(i), (c)(1)(i), (c)(3)(i), or (d)(1), the owner or operator shall keep the records specified in paragraphs (b)(1)(i) through (iii) of this section. For flares complying with § 63.1436, the owner or operator shall comply with the recordkeeping requirements specified therein.

(i) The flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate determinations, and exit velocity determinations made during the flare specification determination required by § 63.1437(c); and

(iii) All periods during the flare specification determination required by § 63.1437(c) when all pilot flames are absent.

(2) The following information when using a combustion, recovery, or recapture device (other than a flare) to achieve compliance with the process vent control requirements in § 63.1425(b), (c), or (d):

(i) For a combustion, recovery, or recapture device being used to comply with a percent reduction requirement of § 63.1425(b)(1)(i), (b)(2)(ii), (c)(1)(ii), (c)(3)(ii), or (d)(2), or the annual epoxide emission limitation in § 63.1425(b)(1)(iii) or (b)(2)(iv), the percent reduction of organic HAP or TOC achieved, as determined using the procedures specified in the process vent requirements in § 63.1426;

(ii) For a combustion device being used to comply with an outlet concentration limitation of § 63.1425(b)(1)(ii) or (b)(2)(iii), the concentration of organic HAP or TOC outlet of the combustion device, as determined using the procedures specified in the process vent requirements in § 63.1426;

(iii) For a boiler or process heater, a description of the location at which the process vent stream is introduced into the boiler or process heater;

(iv) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the process vent stream is introduced with combustion air or is used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC achieved, as determined using the procedures specified in § 63.1426.

(c) *Records related to the establishment of parameter monitoring levels.* For each parameter monitored according to the process vent monitoring requirements in § 63.1429(a) and either table 5 or 6 to this subpart, or for alternate parameters and/or parameters for alternate control techniques monitored according to the alternative parameter monitoring reporting requirements in § 63.1439(f) as allowed under § 63.1429(b), maintain documentation showing the establishment of the level that indicates that the combustion, recovery, or recapture device is operated in a manner to ensure compliance with the provisions of this subpart, as required by the process vent monitoring requirements in § 63.1429(d).

(d) *Records to demonstrate continuous compliance.* The owner or operator that uses a combustion, recovery, or recapture device to comply with the process vent control requirements in § 63.1425(b), (c), or (d) shall keep the following records readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under the process vent monitoring requirements in § 63.1429(a) as applicable, and listed in table 5 or 6 to this subpart, as applicable, or specified by the Administrator in accordance with the alternative parameter monitoring reporting requirements in § 63.1439(f), as allowed under § 63.1429(b). These records shall be kept as specified under § 63.1439(d), except as specified in paragraphs (d)(1)(i) and (ii) of this section.

(i) For flares, the records specified in table 5 or 6 to this subpart shall be maintained in place of continuous records.

(ii) For carbon adsorbers used for process vents from batch unit operations, the records specified in table 5 of this subpart shall be maintained in place of daily averages.

(2) Records of the daily average value for process vents from continuous unit operations or batch unit operations of each continuously monitored parameter, except as provided in paragraphs (d)(2)(i) and (ii) of this section.

(i) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the daily averages. In addition, monitoring data recorded during periods of non-operation of the process (or specific portion thereof) resulting in cessation of organic HAP emissions shall not be included in computing the daily averages.

(ii) If all recorded values for a monitored parameter during an operating day are above the minimum or below the maximum parameter monitoring level established in accordance with the process vent monitoring requirements in § 63.1429(d), the owner or operator may record that all values were above the minimum or below the maximum level established, rather than calculating and recording a daily average for that operating day.

(3) Except as specified in paragraph (d)(6) of this section, hourly records of whether the flow indicator for bypass lines specified under § 63.1429(c)(1) was operating and whether a diversion was detected at any time during the hour. Also, records of the time(s) of all periods when the process vent was diverted from the combustion, recovery, or recapture device, or the flow indicator specified in § 63.1429(c)(1) was not operating.

(4) Except as specified in paragraph (d)(6) of this section, where a seal or closure mechanism is used to comply with the process vent monitoring requirements for bypass lines in § 63.1429(c)(2), hourly records of flow are not required. For compliance with §

63.1429(c)(2), the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanism has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has been broken.

(5) Records specifying the times and duration of periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high level adjustments. In addition, records specifying any other periods of process or combustion, recovery, or recapture device operation when monitors are not operating.

(6) For each flow event from a bypass line subject to the requirements in § 63.1429(c), beginning no later than the compliance dates specified in § 63.1422(h), the owner or operator shall 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 in this subpart, the owner or operator shall 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.

(7) For process vents in ethylene oxide service subject to the requirements of § 63.1426(g), owners and operators shall keep the records specified in paragraphs (d)(7)(i) and (ii) of this section in addition to those records specified elsewhere in this section.

(i) For process vents, include all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations used to determine the total uncontrolled ethylene oxide mass emissions rate for the sum of all vent gas streams.

(ii) If emissions are vented through a closed vent system to a non-flare control device, then the owner or operator shall keep records of all periods during which

operating values are outside of the applicable operating limits specified in § 63.124(b)(4) through (6) when regulated material is being routed to the non-flare control device. The record shall specify the identification of the control device, the operating parameter, the applicable limit, and the highest (for maximum operating limits) or lowest (for minimum operating limits) value recorded during the period.

(e) *Records related to the group determination for process vents that are associated with the use of nonepoxide organic HAP to make or modify the product—*

(1) *Process vents from batch unit operations.* Except as provided in paragraphs (e)(1)(vi) and (vii) of this section, the owner or operator of an affected source shall maintain the records specified in paragraphs (e)(1)(i) through (v) of this section for each PMPU that uses a nonepoxide organic HAP to make or modify the product in batch unit operations. The records required to be maintained by this paragraph are limited to the information developed and used to make the group determination under the process vent requirements for processes using a nonepoxide organic HAP to make or modify the product in § 63.1428(a) through (e), as appropriate. If an owner or operator did not need to develop certain information (e.g., annual average flow rate) to determine the group status, the owner or operator is not required to develop additional information. The owner or operator may elect Group 1 status for process vents without making a Group 1/Group 2 determination. In such event, none of the records specified in paragraphs (e)(1)(i) through (v) are required.

(i) A description of, and an emission estimate for, each batch emission episode, and the total emissions associated with one batch cycle for each unique product class made in the PMPU.

(ii) Total annual uncontrolled TOC or nonepoxide organic HAP emissions from the combination of process vents from batch unit operations associated with the use of

nonepoxide organic HAP to make or modify the product, as determined in accordance with the process vent requirements for group determinations in § 63.1428(b).

(iii) The annual average flow rate for the combination of process vents from batch unit operations associated with the use of organic HAP to make or modify the product, as determined in accordance with the process vent requirements for group determinations in § 63.1428(d).

(iv) The cutoff flow rate, determined in accordance with the process vent requirements for group determinations in § 63.1428(e).

(v) The results of the PMPU group determination (i.e., whether the combination of process vents is Group 1 or Group 2).

(vi) If the combination of all process vents from batch unit operations associated with the use of an organic HAP to make or modify the product is subject to the Group 1 batch process vent control requirements for nonepoxide HAP emissions from making or modifying the product in § 63.1425((c)(1), none of the records in paragraphs (e)(1)(i) through (v) of this section are required.

(vii) If the total annual emissions from the combination of process vents from batch unit operations associated with the use of an organic HAP to make or modify the product are less than the thresholds specified in the definition of Group 1 combination of batch process vents in § 63.1423, only the records in paragraphs (e)(1)(i) and (ii) of this section are required.

(2) *Process vents from continuous unit operations.* The owner or operator of an affected source that uses nonepoxide organic HAP to make or modify the product in continuous unit operations shall keep records regarding the measurements and calculations performed to determine the TRE index value of each process vent stream. The owner or operator of Group 1 continuous process vents that are subject to the control requirements of § 63.1425(c)(3) is not required to keep these records.

(f) *Records for Group 2 process vents that are associated with the use of nonepoxide organic HAP to make or modify the product.* The following records shall be maintained for PMPUs with a Group 2 combination of batch process vents and/or one or more Group 2 continuous process vents.

(1) *Process vents from batch unit operations—emission records.* The owner or operator shall maintain records of the combined total annual nonepoxide organic HAP emissions from process vents associated with the use of nonepoxide organic HAP to make or modify the product for each PMPU where the combination of these process vents is classified as Group 2.

(2) *Process vents from continuous unit operations—monitoring records for vents with TRE between 1.0 and 4.0.* The owner or operator using a recovery device or other means to achieve and maintain a TRE index value greater than 1.0 but less than 4.0 as specified in the HON process vent requirements in § 63.113(a)(3) or (d) shall keep the following records readily accessible:

(i) Continuous records of the equipment operating parameters specified to be monitored under § 63.114(b) and listed in table 5 to this subpart or specified by the Administrator in accordance with §§ 63.114(c) and 63.117(e); and

(ii) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 63.152(f). If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 5 to this subpart shall be kept instead of the daily averages.

(3) *Process vents from continuous unit operations—records related to process changes.* The owner or operator subject to the provisions of this subpart who has elected to demonstrate compliance with the TRE index value greater than 4.0 under § 63.113(e) or greater than 1.0 under § 63.113(a)(3) or (d) shall keep readily accessible records of:

(i) Any process changes as defined in § 63.115(e); and

(ii) Any recalculation of the TRE index value pursuant to § 63.115(e).

(4) *Process vents from continuous unit operations—records for vents with a flow rate less than 0.005 standard cubic meter per minute.* The owner or operator who elects to comply by maintaining a flow rate less than 0.005 standard cubic meter per minute under § 63.113(f), shall keep readily accessible records of:

(i) Any process changes as defined in § 63.115(e) that increase the process vent stream flow rate;

(ii) Any recalculation or measurement of the flow rate pursuant to § 63.115(e); and

(iii) If the flow rate increases to 0.005 standard cubic meter per minute or greater as a result of the process change, the TRE determination performed according to the procedures of § 63.115(d).

(5) *Process vents from continuous unit operations—records for vents with an organic HAP concentration less than 50 parts per million.* The owner or operator who elects to comply by maintaining an organic HAP concentration less than 50 parts per million by volume organic HAP concentration under § 63.113(g) shall keep readily accessible records of:

(i) Any process changes as defined in § 63.115(e) that increase the organic HAP concentration of the process vent stream;

(ii) Any recalculation or measurement of the concentration pursuant to § 63.115(e); and

(iii) If the organic HAP concentration increases to 50 parts per million by volume or greater as a result of the process change, the TRE determination performed according to the procedures of § 63.115(d).

(g) *Notification of Compliance Status.* The owner or operator of an affected source shall submit the information specified in paragraphs (g)(1) through (3) of this section, as appropriate, as part of the Notification of Compliance Status specified in § 63.1439(e)(5).

(1) For the owner or operator complying with the process vent control requirements in § 63.1425(b), (c)(1), (c)(3), or (d), the information specified in paragraph (b) of this section related to the compliance demonstration, and the information specified in paragraph (c) of this section related to the establishment of parameter monitoring levels,

(2) For each PMPU where the combination of process vents from batch unit operations that are associated with the use of nonepoxide organic HAP to make or modify the product is Group 2, the information related to the group determination specified in paragraph (e)(1) of this section.

(3) For each process vent from a continuous unit operation that is associated with the use of nonepoxide organic HAP to make or modify the product that is Group 2, the information related to the group determination specified in paragraph (e)(2) of this section.

(h) *Periodic Reports.* The owner or operator of an affected source shall submit Periodic Reports of the recorded information specified in paragraphs (h)(1) through (9) of this section, as appropriate, according to the schedule for submitting Periodic Reports in § 63.1439(e)(6)(i).

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values recorded under paragraph (d)(2) of this section were above the maximum, or below the minimum, level established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data are not collected for each excursion caused by insufficient monitoring data as defined in § 63.1438(f)(1)(iv), (f)(2)(i)(B), or (f)(3)(ii).

(3) Reports of the times and durations of all periods recorded under paragraph (d)(3) of this section when the process vent stream is diverted from the combustion, recovery, or recapture device through a bypass line and if applicable, the information in paragraph (h)(7) of this section. Include the start date, start time, and duration in hours of each period.

(4) Reports of all periods recorded under paragraph (d)(4) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out and if applicable, the information in paragraph (h)(7) of this section. Include the start date, start time, and duration in hours of each period.

(5) Except as specified in § 63.1436(a), reports of the times and durations of all periods recorded under paragraph (d)(1)(i) of this section in which all pilot flames of a flare were absent. Include the start date, start time, and duration in hours of each period.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (d)(1)(ii) of this section were above the maximum, or below the minimum, levels established in the Notification of Compliance Status or operating permit. Include the identification of the carbon bed, the monitored parameter that was outside the established range, and the start date, start time, and duration in hours of the regeneration cycle.

(7) Beginning no later than the compliance dates specified in § 63.1422(h), the owner or operator shall comply with this paragraph (h)(7) in addition to the requirements in paragraphs (h)(3) and (4) of this section. For bypass lines subject to the requirements in § 63.1429(c), the Periodic Report shall 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.

(8) For process vents in ethylene oxide service subject to the requirements of § 63.1426(g), the Periodic Report shall include the records for periods specified in paragraph (d)(7)(ii) of this section. Indicate the start date and time and end date and time for each period.

(9) For any maintenance vent release exceeding the applicable limits in § 63.1425(h)(1), the Periodic Report shall include the information specified in paragraphs (h)(9)(i) through (iv) of this section. For the purposes of this reporting requirement, if an owner or operator complies with § 63.1425(h)(1)(iv), then the owner or operator shall 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 LEL 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 § 63.1425(h)(1)(ii) was used and active purging was initiated while the concentration of the vapor was 10 percent or greater of its LEL, also include the concentration 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.

(i) *Reports of process changes.* Whenever a process change, as defined in § 63.1420(g)(3), is made that causes a Group 2 combination of batch process vents at a

PMPU that are associated with the use of nonepoxide organic HAP to make or modify the product to become Group 1, the owner or operator shall submit a report within 180 days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report or in a separate submittal to the Administrator, as specified in § 63.1439(e)(6)(iii)(D)(*1*). A description of the process change shall be submitted with the report.

(j) *Reporting requirements for Group 2 continuous process vents.* (1) Whenever a process change, as defined in § 63.1420(g)(3), is made that causes a Group 2 continuous process vent with a TRE greater than 4.0 to become a Group 2 continuous process vent with a TRE less than 4.0, the owner or operator shall submit a report within 180 calendar days after the process change is made or the information regarding the process change is known, unless the flow rate is less than 0.005 standard cubic meters per minute. The report may be submitted as part of the next periodic report. The report shall include:

(i) A description of the process change;

(ii) The results of the recalculation of the TRE index value required under § 63.1428(h)(2), and recorded under paragraph (f)(3) of this section; and

(iii) A statement that the owner or operator will comply with the process vent monitoring requirements specified in § 63.1429, as appropriate.

(2) Whenever a process change, as defined in § 63.1420(g)(3), is made that causes a Group 2 continuous process vent with a flow rate less than 0.005 standard cubic meters per minute to become a Group 2 continuous process vent with a flow rate of 0.005 standard cubic meters per minute or greater, the owner or operator shall submit a report within 180 calendar days after the process change is made or the information regarding the process change is known, unless the organic HAP concentration is less than 50 ppmv. The report may be submitted as part of the next periodic report. The report shall include:

(i) A description of the process change;

(ii) The results of the calculation of the TRE index value required under § 63.1428(h)(2), and recorded under paragraph (f)(3) of this section; and

(iii) A statement that the owner or operator will comply with the process vent monitoring requirements specified in § 63.1429, as appropriate.

(3) Whenever a process change, as defined in § 63.1420(g)(3), is made that causes a Group 2 continuous process vent with an organic HAP concentration less than 50 ppmv to become a Group 2 continuous process vent with an organic HAP concentration of 50 ppmv or greater and a TRE index value less than 4.0, the owner or operator shall submit a report within 180 calendar days after the process change is made or the information regarding the process change is known, unless the flow rate is less than 0.005 standard cubic meters per minute. The report may be submitted as part of the next periodic report. The report shall include:

(i) A description of the process change;

(ii) The results of the calculation of the TRE index value required under § 63.1428(h)(2), and recorded under paragraph (f)(3) of this section; and

(iii) A statement that the owner or operator will comply with the process vent monitoring requirements specified in § 63.1429, as appropriate.

(k) *Alternative requests.* If an owner or operator uses a combustion, recovery, or recapture device other than those specified in the process vent monitoring requirements in § 63.1429(a)(1) through (7) and listed in table 5 or 6 to this subpart; requests approval to monitor a parameter other than those specified in § 63.1429(a)(1) through (7) and listed in table 5 or 6 to this subpart; or uses ECO and requests to monitor a parameter other than those listed in § 63.1427(i)(1)(i) through (iii), as allowed under § 63.1427(i)(1)(iv), the owner or operator shall submit a description of planned reporting and recordkeeping procedures, as specified in § 63.1439(f)(3), as part of the Precompliance Report as

required under § 63.1439(e)(4), or to the Administrator as a separate submittal. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Precompliance Report.

14. Amend § 63.1431 by revising paragraphs (c)(1)(iii) and (c)(2) to read as follows:

§ 63.1431 Process vent annual epoxides emission factor plan requirements.

* * * * *

(c) * * *

(1) * * *

(iii) Annual emissions after the combustion, recovery, or recapture device. The expected annual emissions after control shall be determined using the following equation:

Equation 1 to Paragraph (c)(1)(iii)

$$AE_{control} = (AE_{uncontrolled})\left[\left(1 - \frac{R}{100}\right)\right] \quad \text{[Equation 15]}$$

Where:

$AE_{control}$ = Annual epoxide emissions after control, kg/yr.
$AE_{uncontrolled}$ = Annual uncontrolled epoxide emissions, determined in accordance with paragraph (c)(1)(i) of this section, kg/yr.
R = Expected control efficiency of the combustion, recovery, or recapture device, percent, as determined in § 63.1426(c).

* * * * *

(2) The owner or operator shall conduct a performance test in accordance with § 63.1426(c) to determine the epoxide control efficiency of the combustion, recovery, or recapture device. The owner or operator shall then recalculate the annual epoxide emissions after control using Equation 1 to Paragraph (c)(1)(iii) of this section, except that the control efficiency, R, shall be the measured control efficiency. This information shall be submitted as part of the Notification of Compliance Status, as provided in § 63.1439(e)(5).

* * * * *

15. Amend § 63.1432 by revising paragraph (a), and adding paragraphs (r) through (w) to read as follows:

§ 63.1432 Storage vessel provisions.

(a) For each storage vessel located at an affected source, the owner or operator shall comply with the HON storage vessel requirements of §§ 63.119 through 63.123 and the HON leak inspection provisions in § 63.148, with the differences noted in paragraphs (b) through (q) of this section and, beginning **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, paragraphs (r) through (w) of this section, for the purposes of this subpart.

* * * * *

(r) Substitute "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h)," for each occurrence of "For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10),". Owners and operators of a storage vessel with an internal floating roof subject to § 63.119(b)(5)(ix), (x), (xi), and (xii) in accordance with this paragraph may install the required upgraded deck fittings and controls for guidepoles the next time the storage vessel is emptied and degassed, or no later than March 18, 2036.

(s) For storage vessels in ethylene oxide service:

(1) Substitute "in ethylene oxide service, as defined in § 63.101" with "in ethylene oxide service, as defined in § 63.1423".

(2) Substitute "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h)," for each occurrence of "For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11),".

(3) To demonstrate compliance for storage vessels in ethylene oxide service, as defined in § 63.1423, and establish the parameter monitoring level(s), owners or

operators shall meet the requirements in § 63.124 (in addition to the HON storage vessel requirements specified in this section), except as specified in paragraphs (s)(3)(i) and (ii) of this section.

(i) Substitute "§ 63.100(k)(11)" with "§ 63.1422(h)".

(ii) Substitute "§ 63.108" with "§ 63.1436".

(t) Substitute "§ 63.1420(h)(4)" for each occurrence of "§ 63.102(f) of subpart F of this part".

(u) Substitute "§ 63.1436" for each occurrence of "§ 63.108".

(v) The phrase ", and PRDs in ethylene oxide service," in § 63.119(a)(7)(ii) does not apply for purposes of this subpart.

(w) Section 63.119(b)(7) does not apply.

16. Amend § 63.1433 by revising paragraph (a) introductory text and paragraph (a)(1), and adding paragraphs (a)(21) through (26) to read as follows:

§ 63.1433 Wastewater provisions.

(a) *Process wastewater.* Except as specified in paragraph (c) of this section, the owner or operator of each affected source shall comply with the HON wastewater requirements in §§ 63.132 through 63.147 for each process wastewater stream originating at an affected source, with the HON leak inspection requirements in § 63.148, and with the HON requirements in § 63.149 for equipment that is subject to § 63.149, with the differences noted in paragraphs (a)(1) through (20) of this section and, beginning **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, paragraphs (a)(21) through (26) of this section. Further, the owner or operator of each affected source shall comply with the requirements of § 63.105(a) for maintenance wastewater, as specified in paragraph (b) of this section.

(1) Owners and operators of affected sources are not required to comply with the HON new source wastewater requirements in § 63.132(b)(1) and (d) for the purposes of

this subpart. Owners or operators of all new affected sources, as defined in this subpart, shall comply with the HON requirements for existing sources in §§ 63.132 through 63.149, with the exceptions noted in paragraphs (a)(2) through (26) of this section.

* * * * *

(21) Substitute "For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10)," with "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h),".

(22) Substitute "pressure relief devices are subject to the requirements specified in § 63.165(e) of subpart H of this part" with "pressure relief devices are subject to the requirements specified in § 63.1434(c)".

(23) For wastewater in ethylene oxide service:

(i) Substitute "For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11)," with "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h),".

(ii) Substitute "in ethylene oxide service, as defined in § 63.101" with "in ethylene oxide service, as defined in § 63.1423".

(iii) § 63.138(b)(3) and (c)(3) do not apply. Instead, for each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h), for Group 1 wastewater streams in ethylene oxide service, you must comply with one of the treatment options specified in paragraph (a)(23)(iii)(A), (B), or (C) of this section in addition to the control device requirements specified in §63.138(a)(5). Individual wastewater streams may be excluded from this requirement if their combined ethylene oxide load in the wastewater prior to treatment is less than 1.0 megagram per year, provided you comply with paragraph (a)(23)(iii)(D) of this section.

(A) Reduce the concentration of ethylene oxide of each wastewater stream, by removal or destruction, to a level less than 1 ppmw. If you choose to comply with this paragraph (a)(23)(iii)(A) of this section, then you must demonstrate compliance using procedures specified in § 63.145(b), except the parenthetical sentence at the end of § 63.145(b) does not apply, and when "§ 63.138(b)(1) and § 63.138(c)(1)" are referred to in § 63.145(b), it means this paragraph (a)(23)(iii)(A) of this section.

(B) Comply with § 63.138(d). If you choose to comply with this paragraph (a)(23)(iii)(B) of this section, then neither a design evaluation nor a performance test is required in accordance with § 63.145(a)(1).

(C) Comply with § 63.138(e). You may not use a design evaluation as specified in § 63.145(a)(2) to demonstrate compliance with this paragraph (a)(23)(iii)(C) of this section. Instead, to demonstrate compliance with this paragraph (a)(23)(iii)(C) of this section, you must conduct a performance test as specified in § 63.145(c) or (d).

(D) If you exclude individual wastewater streams from compliance with paragraph (a)(23)(iii) of this section based on combined ethylene oxide load prior to treatment, then you must conduct annual sampling of each wastewater stream using the procedures specified in §§ 63.144(b)(5)(i)(I) and 63.145(b), except the parenthetical sentence at the end of § 63.145(b) does not apply and when "§ 63.138(b)(1) and § 63.138(c)(1)" are referred to in § 63.145(b), it means this paragraph (a)(23)(iii)(D) of this section.

(24) Substitute "For each source as defined in § 63.101," with "For each affected source as described in § 63.1420(a),".

(25) Substitute "§ 63.108" with "§ 63.1436".

(26) Substitute "Except for pressure relief devices subject to § 63.165(e)(4)," with "Except for pressure relief devices subject to § 63.1434(c),".

* * * * *

17. Amend § 63.1434 by revising the section heading, paragraphs (a), (b), and (f), and adding paragraph (i) to read as follows:

§ 63.1434 Equipment leak and transfer rack provisions.

(a) The owner or operator of each affected source shall comply with the HON equipment leak requirements in 40 CFR part 63, subpart H for all equipment in organic HAP service, except §§ 63.165 and 63.184, any recordkeeping and reporting related to §§ 63.165 and 63.184, as specified in paragraphs (b) through (h) of this section, and beginning **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, as specified in paragraphs (a)(1) through (7) of this section.

(1) Substitute "For each source as defined in § 63.101, and for each source as defined in § 63.191, on and after July 15, 2027," with "For each affected source as described in § 63.1420(a), on and after March 18, 2029,".

(2) Except as specified in paragraph (a)(7) of this section, substitute "For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10)," with "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h),".

(3) For equipment in ethylene oxide service:

(i) Substitute "in ethylene oxide service, as defined in § 63.101" with "in ethylene oxide service, as defined in § 63.1423".

(ii) Substitute "For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11)," with "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h),".

(iii) Except as specified in paragraph (a)(3)(iv)(B) of this section, if § 63.174(b)(3)(vi) refers to "once every month," then substitute it for "once every quarter;" otherwise, § 63.174(b)(3)(vi) applies as written.

(iv) § 63.171 does not apply for light liquid pumps in ethylene oxide service, gas/vapor and light liquid valves in ethylene oxide service, and gas/vapor and light liquid connectors in ethylene oxide service. Instead, when leaks have been detected, delay of repair beyond 15 days is allowed if you meet the requirements in paragraphs (a)(3)(iv)(A) and (B) of this section, or paragraph (a)(3)(iv)(C) of this section.

(A) For PMPUs with less than 5,000 pieces of equipment in ethylene oxide service, you may have no more than 5 pieces of equipment in ethylene oxide service on delay of repair at a given time. For PMPUs with more than 5,000 pieces of equipment in ethylene oxide service, you may have no more than 0.1-percent of equipment in ethylene oxide service on delay of repair at a given time.

(B) Equipment in ethylene oxide service that is on delay of repair must be monitored monthly, following the monitoring requirements at § 63.180(b), and the instrument reading must not indicate that a delay of repair leak is detected. A delay of repair leak is defined as an instrument reading of 1,000 parts per million or greater. If a delay of repair leak is detected, then the delay of repair provisions no longer apply and the leak must be fixed no later than 15 calendar days after the delay of repair leak is detected.

(C) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in ethylene oxide service. Equipment that is isolated from the process is not applicable to the requirements in paragraphs (a)(3)(iv)(A) and (B) of this section.

(4) Substitute "Except for pressure relief devices subject to § 63.165(e)(4)," with "Except for pressure relief devices subject to paragraph (c) of this section,".

(5) Substitute “§ 63.108” with “§ 63.1436”.

(6) For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h), the requirements specified in § 63.168(b)(2)(i) through (iii) for valves that are either in gas service or in light liquid service no longer apply. Instead, for valves that are either in gas service or in light liquid service, a leak is detected if the instrument reading equals or exceeds 100 ppmv.

(7) Beginning no later than the compliance dates specified in § 63.1422(h), § 63.170 no longer applies. Instead, if a gaseous emission stream from a surge control vessel or bottoms receiver is considered a process vent as defined in § 63.1423, you must comply with either paragraph (a)(7)(i) or (ii) of this section.

(i) Route the organic vapors vented from the surge control vessel or bottoms receiver to a fuel gas system or process with a closed vent system meeting the requirements in § 63.119(f); or

(ii) Comply with § 63.1425 through 63.1431, as applicable.

(b) Except as specified in paragraphs (a)(1) through (3) and (a)(6) and (7) of this section, the compliance date for the equipment leak provisions in this section is provided in § 63.1422(d).

* * * * *

(f) The Periodic Reports required by § 63.182(a)(3) and (d) shall be submitted as part of the Periodic Reports required by § 63.1439(e)(6).

* * * * *

(i) For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h), the owner or operator of each transfer rack that does not meet the criteria specified in § 63.1420(c)(10) or (11) shall comply with the HON transfer rack requirements in §§ 63.126 through 63.130 and the HON leak

inspection provisions in § 63.148, with the differences noted in paragraphs (i)(1) through (13) of this section.

(1) When the term “Group 1 transfer rack” is used in §§ 63.126 through 63.130, the definition of this term in § 63.1423 shall apply for the purposes of this subpart.

(2) When the term “Group 2 transfer rack” is used in §§ 63.126 through 63.130, the definition of this term in § 63.1423 shall apply for the purposes of this subpart.

(3) When “organic hazardous air pollutants,” “organic HAP’s,” or “organic HAP” are used in §§ 63.126 through 63.130, the definition of “Organic hazardous air pollutant(s) (organic HAP)” shall apply for the purposes of this subpart.

(4) Sections 63.126(d) and (h)(1), and 63.128(d) do not apply.

(5) The phrase “subject to this subpart” means 40 CFR part 63, subpart PPP.

(6) When the term “range” is used in §§ 63.126 through 63.130, the term “level” shall be used instead, for the purposes of this subpart. This level shall be determined using the procedures specified in parameter monitoring procedures in § 63.1438.

(7) The owner or operator of an affected source shall comply with this paragraph (i)(7) instead of § 63.128(a)(1) for the purposes of this subpart. If the combustion, recovery, or recapture device used to comply with § 63.126(b) is also used to comply with any of the requirements found in §§ 63.1425 through 63.1431 and/or § 63.1433, the performance test required in or accepted by §§ 63.1425 through 63.1431 and/or § 63.1433 is acceptable for demonstrating compliance with § 63.126(b), for the purposes of this subpart.

(8) When § 63.152(b) is referred to in §§ 63.127, 63.128, and 63.129, the Notification of Compliance Status requirements contained in § 63.1439(e)(5) shall apply for the purposes of this subpart.

(9) When § 63.152(c) is referred to in §§ 63.128, 63.129, and 63.130, the Periodic Report requirements contained in § 63.1439(e)(6) shall apply for the purposes of this subpart.

(10) Substitute "For each source as defined in § 63.101, on and after July 15, 2027," with "For each affected source as described in § 63.1420(a), on and after March 18, 2029,".

(11) Substitute "For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10)," with "For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h),".

(12) Substitute "Beginning no later than the compliance dates specified in § 63.100(k)(10)," with "Beginning no later than the compliance dates specified in § 63.1422(h),".

(13) Substitute "§ 63.108" with "§ 63.1436".

18. Amend § 63.1435 by revising paragraph (a) and adding paragraphs (f) through (i) to read as follows:

§ 63.1435 Heat exchanger provisions.

(a) The owner or operator of each affected source shall comply with the requirements of § 63.104 for heat exchange systems, with the exceptions noted in paragraphs (b) through (e) of this section and, beginning **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, in paragraphs (f) through (i) of this section.

* * * * *

(f) Substitute "For each source as defined in § 63.101," with "For each affected source as described in § 63.1420(a),".

(g) Substitute “beginning no later than the compliance dates specified in § 63.100(k)(10)” with “beginning no later than the compliance dates specified in § 63.1422(h).

(h) If an owner or operator complies with § 63.104(g), then § 63.104(b) through (e) no longer apply.

(i) For heat exchange systems in ethylene oxide service:

(1) Substitute “in ethylene oxide service, as defined in § 63.101” with “in ethylene oxide service, as defined in § 63.1423”.

(2) § 63.104(g)(6) does not apply. Instead, for heat exchange systems in ethylene oxide service, the monitoring frequency is monthly.

(3) § 63.104(h)(6) does not apply. Instead, for heat exchange systems in ethylene oxide service, owners and operators 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 the sample was collected.

(4) Section 63.104(k) does not apply. Instead for each source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h), owners and operators must not inject water into or dispose of water through any heat exchange system in a PMPU if the water contains any amount of ethylene oxide, has been in contact with any process stream containing ethylene oxide, or is considered wastewater as defined in § 63.1423.

19. Revise § 63.1436 to read as follows:

§ 63.1436 Flares.

(a) For any flare that is used to reduce organic HAP emissions from a PMPU, the owner or operator may elect to comply with the requirements in this section in lieu of the requirements of § 63.11(b) and the requirements referenced therein. However, beginning no later than the compliance dates specified in § 63.1422(h), the provisions specified in

paragraphs (a)(1) through (25) of this section no longer apply. Instead, if an owner or operator reduces organic HAP emissions from a PMPU by venting emissions through a closed vent system to a steam-assisted, air-assisted, or non-assisted flare, then the owner or operator must meet the applicable requirements for flares as specified in §§ 63.670 and 63.671, including the provisions in tables 12 and 13 to subpart CC of this part, except as specified in paragraph (b) of this section. This requirement 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 a PMPU, as determined on an annual average basis. For purposes of compliance with this paragraph, the following terms are defined in § 63.641: 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.

(1) Section 63.1426(a)(1);

(2) Section 63.1429(a)(2);

(3) Section 63.1437(c)(1) through (3);

(4) Section 63.107(h)(9)(i) related to criteria in § 63.11(b);

(5) Section 63.113(a)(1);

(6) Section 63.114(a)(2);

(7) Section 63.116(a)(1) through (3);

(8) Section 63.117(a)(5)(i) through (iii);

(9) Section 63.118(f)(5);

(10) The last sentence in § 63.119(e)(1) related to flares;

(11) Section 63.120(e)(1) through (6);

(12) Section 63.122(c)(2) and (g)(3);

(13) Section 63.126(b)(2)(i);

(14) Section 63.127(a)(2);

(15) Section 63.128(b)(1) through (3);

(16) Section 63.129(a)(5)(i) through (iii);

(17) Section 63.130(a)(2)(i), (c), and (d)(5);

(18) Section 63.139(c)(3) and (d)(3);

(19) Section 63.145(j)(1) through (3);

(20) Section 63.146(b)(7)(i)(A) through (C);

(21) Section 63.147(d)(1);

(22) Section 63.172(d);

(23) Section 63.180(e)(1) through (3);

(24) Section 63.181(g)(1)(iii); and

(25) The phrase "including periods when a flare pilot light system does not have a flame" in § 63.181(g)(2)(i).

(b) The exceptions specified in § 63.108(b) through (o) apply, except as specified in paragraphs (b)(1) through (7) of this section.

(1) Where the term "chemical manufacturing process unit" is used, the term "PMPU" applies instead for the purposes of this subpart.

(2) Where the reference "§ 63.100(k)(10)" is used, the reference § 63.1422(h) applies instead for the purposes of this subpart.

(3) Where the phrase "Hazardous Organic Chemical Manufacturing Sector Lead" is used, the phrase "Polyether Polyols Sector Lead" applies instead for the purposes of this subpart.

(4) Where the reference "§ 63.152(b)(7)" is used, the reference "§ 63.1439(e)(5)(ix)" applies instead for the purposes of this subpart.

(5) Instead of the address given in § 63.108(n), the address to submit the alternative means of limitation request is U.S. EPA, Attn: Polyether Polyols Sector Lead, Mail Drop: E143-01, 109 T.W. Alexander Drive, P.O. Box 12055, RTP, NC 27711.

(6) When requesting an alternative under 63.1426(a)(2) in accordance with § 63.670(r), substitute “the flare achieves 96.5 percent combustion efficiency (or 98 percent destruction efficiency)” with “the flare achieves a control efficiency greater than 98 percent”.

(7) Section 63.670(o)(2) does not apply. Instead, flare management plans must be submitted to the Administrator in a supplement to the Notification of Compliance Status report in accordance with § 63.1439(e)(5). The plan should be updated periodically to account for changes in the operation of the flare, such as new connections to the flare or the installation of a flare gas recovery system, but the plan needs to be re-submitted to the Administrator only if the owner or operator alters the design smokeless capacity of the flare. The owner or operator must comply with the updated plan as submitted.

20. Amend § 63.1437 by revising introductory text of paragraphs (a) and (c), and adding paragraph (c)(4) to read as follows:

§ 63.1437 Additional requirements for performance testing.

(a) Initial and subsequent performance testing shall be conducted in accordance with § 63.7(a)(1), (a)(3), (d), (e)(2), (e)(4), (g), and (h), with the exceptions specified in paragraphs (a)(1) through (4) of this section and the additions specified in paragraph (b) of this section. If a performance test has never been conducted, conduct an initial performance test no later than the compliance dates specified in § 63.1422(h). Beginning no later than the compliance dates specified in § 63.1422(h), conduct subsequent performance tests no later than the compliance dates specified in § 63.1422(h) or 60 calendar months after the previous performance test, whichever is later. Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of start-up and shutdown unless specified by the Administrator or an applicable subpart. The owner or operator may not

conduct performance tests during periods of malfunction. The owner or operator must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent the entire range of normal operation, including operational conditions for maximum emissions if such emissions are not expected during maximum production. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

* * * * *

(c) Notwithstanding any other provision of this subpart, if an owner or operator of an affected source uses a flare to comply with any of the requirements of this subpart, the owner or operator shall comply with paragraphs (c)(1) through (3) of this section, except as specified in paragraph (c)(4) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration. If a compliance demonstration has been conducted previously for a flare, using the techniques specified in paragraphs (c)(1) through (3) of this section, that compliance demonstration may be used to satisfy the requirements of this paragraph if either no deliberate process changes have been made since the compliance demonstration, or the results of the compliance demonstration reliably demonstrate compliance despite process changes.

* * * * *

(4) For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h), paragraphs (c)(1) through (3) of this section no longer apply and instead the owner or operator of the affected source shall comply with § 63.1436 for the flare.

21. Amend § 63.1438 by revising paragraph (a) introductory text, paragraphs (a)(3), (b)(2), (f)(1)(i), and (f)(3)(i) to read as follows:

§ 63.1438 Parameter monitoring levels and excursions.

(a) *Establishment of parameter monitoring levels.* The owner or operator of a combustion, recovery, or recapture device that has one or more parameter monitoring level requirements specified under this subpart shall establish a maximum or minimum level for each measured parameter. Except for process vents and storage vessels in ethylene oxide service subject to §§ 63.1426(g) and 63.1432(s), if a performance test is required by this subpart for a combustion, recovery, or recapture device, the owner or operator shall use the procedures in either paragraph (b) or (c) of this section to establish the parameter monitoring level(s). For process vents and storage vessels in ethylene oxide service subject to §§ 63.1426(g) and 63.1432(s), the owner or operator shall use the procedures specified in § 63.124 to establish the parameter monitoring level(s). Except for flares subject to § 63.1436, if a performance test is not required by this subpart for a combustion, recovery, or recapture device, the owner or operator may use the procedures in paragraph (b), (c), or (d) of this section to establish the parameter monitoring levels. For flares subject to § 63.1436, the owner or operator shall use the procedures specified in § 63.1436 to establish the parameter monitoring levels. When using the procedures specified in paragraph (c) or (d) of this section, the owner or operator shall submit the information specified in § 63.1439(e)(4)(viii) for review and approval, as part of the Precompliance Report.

* * * * *

(3) Nothing in this section shall be construed to allow a monitoring parameter excursion caused by an activity that violates other applicable provisions of 40 CFR part 63, subparts A, F, G, H, or CC.

(b) * * *

(2) *Process vents from batch unit operations.* For process vents from batch unit operations, during initial compliance testing, the appropriate parameter shall be

monitored continuously during the entire test period. The monitoring level(s) shall be those established during the compliance test.

* * * * *

(f) * * *

(1) * * *

(i) The daily average value of one or more monitored parameters is above the maximum level or below the minimum level established for the given parameters or, for parameters used to comply with § 63.1425(g) or 63.1432(s)(3), when the 1-hour block average value of one or more monitored parameters is above the maximum level or below the minimum level established for the given parameters.

* * * * *

(3) * * *

(i) When the daily average value of one or more monitored parameters is above the maximum or below the minimum established level for the given parameters or, for parameters used to comply with § 63.1425(g) or 63.1432(s)(3), when the 1-hour block average value of one or more monitored parameters is above the maximum level or below the minimum level established for the given parameters.

* * * * *

22. Revise § 63.1439 to read as follows:

§ 63.1439 General recordkeeping and reporting provisions.

(a) *Data retention.* Unless otherwise specified in this subpart, the owner or operator of an affected source shall keep copies of all applicable records and reports required by this subpart for at least 5 years. All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent 6 months of records shall be retained on site or shall be accessible from a central location by computer or other means that provide access within 2 hours after a request. The remaining 4 and one-

half years of records may be retained offsite. Records may be maintained in hard copy or computer-readable form including, but not limited to, on microfilm, computer, floppy disk, magnetic tape, or microfiche. Before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, if an owner or operator submits copies of reports to the applicable EPA Regional Office, the owner or operator is not required to maintain copies of reports. Before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, if the EPA Regional Office has waived the requirement of § 63.10(a)(4)(ii) for submittal of copies of reports, the owner or operator is not required to maintain copies of reports.

(b) *Subpart A requirements.* The owner or operator of an affected source shall comply with the applicable recordkeeping and reporting requirements in 40 CFR part 63, subpart A (the General Provisions) as specified in table 1 of this subpart. These requirements include, but are not limited to, the requirements specified in paragraphs (b)(1) and (2) of this section.

(1) *Malfunction recordkeeping and reporting.* Before March 18, 2029, keep the records and report events as specified in paragraphs (b)(1)(i) and (ii) of this section.

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

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

(B) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

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

(ii) *Reports of malfunctions.* If a source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to meet an applicable standard. For each instance, report the date, time, and duration of each failure. For each failure the report must include a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

(2) *Application for approval of construction or reconstruction.* For new affected sources, the owner or operator shall comply with the General Provisions' requirements for the application for approval of construction or reconstruction, as specified in § 63.5, excluding the provisions specified in § 63.5(d)(1)(ii)(H), (d)(1)(iii), (d)(2), and (d)(3)(ii).

(c) *Subpart H requirements.* The owner or operator of an affected source shall comply with the HON equipment leak reporting and recordkeeping requirements in subpart H of this part, except as specified in § 63.1434(a) through (h). Additionally, for equipment in ethylene oxide service, the owner or operator shall keep a count of the equipment in ethylene oxide service and records of the information specified in paragraphs (c)(1) through (4) of this section for each piece of equipment in ethylene oxide service that is placed on delay of repair.

(1) The date that delay of repair began.

(2) The date and instrument reading of each monitoring event.

(3) The date of successful repair.

(4) If the equipment that is isolated from the process such that it is no longer in ethylene oxide service, the date of isolation.

(d) *Recordkeeping and documentation.* The owner or operator required to keep continuous records shall keep records as specified in paragraphs (d)(1) through (11) of this section, unless an alternative recordkeeping system has been requested and approved as specified in paragraph (g) of this section, and except as provided in paragraph (h) of this section. If a monitoring plan for storage vessels pursuant to § 63.1432(i) requires continuous records, the monitoring plan shall specify which provisions, if any, of paragraphs (d)(1) through (11) of this section apply. As described in § 63.1432(i), certain storage vessels are not required to keep continuous records as specified in this paragraph. The owner or operator of such storage vessels shall keep records as specified in the monitoring plan required by § 63.1432(i).

(1) The monitoring system shall measure data values at least once during approximately equal 15-minute intervals.

(2) The owner or operator shall record either each measured data value or block average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values. The owner or operator of process vents from batch unit operations shall record each measured data value.

(3) Daily average values of each continuously monitored parameter shall be calculated for each operating day as specified in paragraphs (d)(3)(i) through (ii) of this section, except as specified in paragraphs (d)(6) and (7) of this section.

(i) The daily average value shall be calculated as the average of all parameter values recorded during the operating day, except as specified in paragraph (d)(7) of this section. The calculated average shall cover a 24-hour period if operation is continuous. If intermittent emissions episodes occur resulting in emissions being vented to a combustion, recapture, or recovery device for a period of less than 24 hours in the

operating day, the daily average shall be calculated based only on the period when emissions are being vented to the combustion, recapture, or recovery device. For example, if a batch unit operation operates such that emissions are vented to a combustion device for 6 hours, then the daily average is the average of the temperature measurements taken during those 6 hours.

(ii) The operating day shall be the 24-hour period that the owner or operator specifies in the operating permit or the Notification of Compliance Status, for purposes of determining daily average values.

(4)-(5) [Reserved]

(6) If all recorded values for a monitored parameter during an operating day are above the minimum level or below the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were above the minimum level or below the maximum level rather than calculating and recording a daily average for that operating day.

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

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

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

(8) For continuous monitoring systems used to comply with this subpart, records documenting the completion of calibration checks, and records documenting the maintenance of continuous monitoring systems that are specified in the manufacturer's

instructions or that are specified in other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(9) The owner or operator of an affected source granted a waiver of recordkeeping or reporting requirements under the General Provisions' recordkeeping and reporting requirements in § 63.10(f) shall maintain the information, if any, specified by the Administrator as a condition of the waiver of recordkeeping or reporting requirements.

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

(i) A list of identification numbers for pressure relief devices that the owner or operator elects to equip with a closed-vent system and control device, subject to the provisions in § 63.1434(c)(4).

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

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

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

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

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

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

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

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

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

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

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

(11) Beginning no later than March 18, 2029, the owner or operator shall keep records of excursions of an applicable standard. For each excursion, record the start date, start time, duration in hours, cause, a list of the affected sources or equipment, whether the excursion occurred during a period of startup, shutdown, or malfunction, an estimate of the quantity of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, actions taken to minimize emissions in accordance with § 63.1420(h)(4), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(e) *Reporting and notification.* In addition to the reports and notifications required by 40 CFR part 63, subpart A, as specified in this subpart, the owner or operator of an affected source shall prepare and submit the reports listed in paragraphs (e)(3) through (9) of this section, as applicable. All reports required by this subpart, and the schedule for their submittal, are listed in table 8 of this subpart.

(1) *Violation of reporting requirements.* Owners and operators shall not be in violation of the reporting requirements of this paragraph (e) for failing to submit information required to be included in a specified report if the owner or operator meets the requirements in paragraphs (e)(1)(i) through (iii) of this section. Examples of circumstances where this paragraph may apply include information related to newly-added equipment or emission points, changes in the process, changes in equipment required or utilized for compliance with the requirements of this subpart, or changes in methods or equipment for monitoring, recordkeeping, or reporting.

(i) The information was not known in time for inclusion in the report specified by this subpart.

(ii) The owner or operator has been diligent in obtaining the information.

(iii) The owner or operator submits a report according to the provisions of paragraphs (e)(1)(iii)(A) through (C) of this section.

(A) If this subpart expressly provides for supplements to the report in which the information is required, the owner or operator shall submit the information as a supplement to that report. The information shall be submitted no later than 60 days after it is obtained, unless otherwise specified in this subpart.

(B) If this subpart does not expressly provide for supplements, but the owner or operator must submit a request for revision of an operating permit pursuant to the state operating permit programs in part 70 of this chapter or the Federal operating permit programs in part 71 of this chapter, due to circumstances to which the information pertains, the owner or operator shall submit the information with the request for revision to the operating permit.

(C) In any case not addressed by paragraph (e)(1)(iii)(A) or (B) of this section, the owner or operator shall submit the information with the first Periodic Report, as required by this subpart, which has a submission deadline at least 60 days after the information is obtained.

(2) *Submittal of reports.* All reports required under this subpart shall be sent to the Administrator at the applicable address listed in the General Provisions' list of addresses of state air pollution control agencies and EPA Regional Offices, in § 63.13 unless otherwise specified in this subpart. If acceptable to both the Administrator and the owner or operator of a source, reports not otherwise required to be submitted electronically may be submitted electronically or on electronic media.

(3) *Initial Notification.* The owner or operator of a new affected source shall submit an Initial Notification to the Administrator containing the information described in paragraph (e)(3)(i) of this section according to the schedule in paragraph (e)(3)(ii) of this section. The General Provisions' Initial Notification requirements in § 63.9(b)(2) and (3) shall not apply for the purposes of this subpart.

(i) The Initial Notification shall include the following information:

(A) The name and address of the owner or operator;

(B) The address (physical location) of the affected source;

(C) An identification of the kinds of emission points within the affected source;

(D) An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date; and

(E) A statement of whether or not the affected source is a major source.

(ii) The Initial Notification shall be submitted according to the schedule in paragraph (e)(3)(ii)(A), (B), or (C) of this section, as applicable.

(A) [Reserved]

(B) For a new source that has an initial start-up on or after August 30, 1999, the application for approval of construction or reconstruction required by the General Provisions in § 63.5(d) shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practical before construction or reconstruction is planned to commence (but it need not be sooner than August 30, 1999). For a new source that reclassifies to major source status after January 19, 2021, and greater than 90 days after the initial start-up, the source shall submit the initial notification required by 63.9(b) no later than 120 days after the source becomes subject to this subpart.

(C) For a new source that has an initial start-up prior to August 30, 1999, the Initial Notification shall be submitted no later than August 30, 1999, or no later than 120 days after the source becomes subject to this subpart, whichever is later. The application

for approval of construction or reconstruction described in the General Provisions' requirements in § 63.5(d) is not required for these sources.

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

(i) The Precompliance Report shall be submitted to the Administrator no later than 12 months prior to the compliance date. Unless the Administrator objects to a request submitted in the Precompliance Report within 45 days after its receipt, the request shall be deemed approved. For new affected sources, the Precompliance Report shall be submitted to the Administrator with the application for approval of construction or reconstruction required in paragraph (b)(2) of this section. Supplements to the Precompliance Report may be submitted as specified in paragraph (e)(4)(vii) of this section. To submit a Precompliance Report for the first time after the compliance date to request an extension for compliance; request approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping, or alternative controls; or request approval to establish parameter monitoring levels according to the procedures contained in § 63.1438(c) or (d), the owner or operator shall notify the Administrator at least 90 days before the planned change is to be implemented; the change shall be considered approved if the Administrator either approves the change in writing, or fails to disapprove the change in writing within 45 days of receipt.

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

(iii) The alternative monitoring parameter information required in paragraph (f) of this section shall be submitted in the Precompliance Report if, for any emission point, the owner or operator of an affected source seeks to comply through the use of a control technique other than those for which monitoring parameters are specified in this subpart or in 40 CFR part 63, subpart G, or seeks to comply by monitoring a different parameter than those specified in this subpart or in 40 CFR part 63, subpart G.

(iv) If the affected source seeks to comply using alternative continuous monitoring and recordkeeping as specified in paragraph (g) of this section, the owner or operator shall submit a request for approval in the Precompliance Report.

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

(vi) [Reserved]

(vii) Supplements to the Precompliance Report may be submitted as specified in paragraph (e)(4)(vii)(A) of this section, or as specified in paragraph (e)(4)(vii)(B) of this section. Unless the Administrator objects to a request submitted in a supplement to the Precompliance Report within 45 days after its receipt, the request shall be deemed approved.

(A) Supplements to the Precompliance Report may be submitted to clarify or modify information previously submitted.

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

(viii) If an owner or operator establishes parameter monitoring levels according to the procedures contained in the parameter monitoring provisions in § 63.1438(c) or (d), the following information shall be submitted in the Precompliance Report:

(A) Identification of which procedures (i.e., § 63.1438(c) or (d)) are to be used; and

(B) A description of how the parameter monitoring level is to be established. If the procedures in § 63.1438(c) are to be used, a description of how performance test data will be used shall be included.

(5) *Notification of Compliance Status.* For existing and new affected sources, a Notification of Compliance Status shall be submitted within 150 days after the compliance dates specified in § 63.1422. Beginning **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, the owner or operator must submit all Notification of Compliance Status reports in PDF format to the EPA following the procedure specified in § 63.9(k). For equipment leaks subject to § 63.1434, the owner or operator shall submit the information specified in the HON equipment leak Notification of Compliance Status requirements in § 63.182(c), in the Notification of Compliance Status required by this paragraph. For all other emission points, including heat exchange systems, the Notification of Compliance Status shall contain the information listed in paragraphs (e)(5)(i) through (vii) of this section. For pressure relief devices subject to the requirements of § 63.1434(c)(3), the owner or operator shall submit the information listed in paragraph (e)(5)(viii) of this section in the Notification of

Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring. For flares subject to the requirements in § 63.1436, owners and operators shall also submit the information in paragraph (e)(5)(ix) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for flare monitoring. For process vents subject to the requirements of § 63.1426(g), storage vessels subject to the requirements of § 63.1432(s), wastewater subject to the requirements of § 63.1433(a)(23), and heat exchange systems subject to the requirements of § 63.1435(i), owners and operators shall also submit the information in paragraph (e)(5)(x) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date. For adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, the owner or operator shall also submit the information listed in paragraph (e)(5)(xi) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date.

(i) The results of any emission point group determinations, process section applicability determinations, performance tests, inspections, continuous monitoring system performance evaluations, any other information required by the test method to be in the test report used to demonstrate compliance, values of monitored parameters established during performance tests, and any other information required to be included in a Notification of Compliance Status under the requirements for overlapping regulations in § 63.1422(j), the HON storage vessel reporting provisions in § 63.122 and the storage vessel provisions in § 63.1432, the HON transfer rack reporting provisions in §§ 63.129 and 63.130, and the HON process wastewater reporting provisions in § 63.146. In addition, the owner or operator shall comply with paragraphs (e)(5)(i)(A) and (B) of this section.

(A) For performance tests, group determinations, or determination that controls are needed, the Notification of Compliance Status shall include one complete test report, except as specified in paragraph (e)(5)(i)(B) of this section, for each test method used for a particular kind of emission point. For additional tests performed for the same kind of emission point using the same method, the results and any other information required by the test method to be in the test report shall be submitted, but a complete test report is not required.

(B) If the performance test results have been submitted electronically through the EPA's Compliance and Emissions Data Reporting Interface (CEDRI) in accordance with paragraph (e)(9) 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 shall be submitted to CEDRI by the date the Notification of Compliance Status report is submitted. A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards (if the owner or operator prepares the standards), record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method to be in the test report.

(ii) For each monitored parameter for which a maximum or minimum level is required to be established under the HON process vent monitoring requirements in § 63.114(e) and the process vent monitoring requirements in § 63.1429(d), the HON process wastewater parameter monitoring requirements in § 63.143(f), the HON transfer rack parameter monitoring requirements in § 63.127(e), paragraph (e)(8) of this section, or paragraph (f) of this section, the information specified in paragraphs (e)(5)(ii)(A)

through (C) of this section shall be submitted. Further, as described in the storage vessel provisions in § 63.1432(k), for those storage vessels for which the parameter monitoring plan (required to be submitted under the HON Notification of Compliance Status requirements for storage vessels in § 63.120(d)(3)) specifies compliance with the parameter monitoring provisions of § 63.1438, the owner or operator shall provide the information specified in paragraphs (e)(5)(ii)(A) through (C) of this section for each monitoring parameter. For those storage vessels for which the parameter monitoring plan required to be submitted under the HON Notification of Compliance Status requirements for storage vessels in § 63.120(d)(2) does not require compliance with the provisions of § 63.1438, the owner or operator shall provide the information specified in § 63.120(d)(3) as part of the Notification of Compliance Status.

(A) The required information shall include the specific maximum or minimum level of the monitored parameter(s) for each emission point.

(B) The required information shall include the rationale for the specific maximum or minimum level for each parameter for each emission point, including any data and calculations used to develop the level and a description of why the level indicates that the combustion, recovery, or recapture device is operated in a manner to ensure compliance with the provisions of this subpart.

(C) The required information shall include a definition of the affected source's operating day, as specified in paragraph (d)(3)(ii) of this section, for purposes of determining daily average values of monitored parameters.

(iii) The determination of applicability for flexible operation units as specified in § 63.1420(e)(1)(iii).

(iv) The parameter monitoring levels for flexible operation units, and the basis on which these levels were selected, or a demonstration that these levels are appropriate at all times, as specified in § 63.1420(e)(5)(ii)(A).

(v) The results for each predominant use determination made under § 63.1420(f)(1) through (7), for storage vessels assigned to an affected source subject to this subpart.

(vi) If any emission point is subject to this subpart and to other standards as specified in § 63.1422(j), and if the provisions of § 63.1422(j) allow the owner or operator to choose which testing, monitoring, reporting, and recordkeeping provisions will be followed, then the Notification of Compliance Status shall indicate which rule's requirements will be followed for testing, monitoring, reporting, and recordkeeping.

(vii) An owner or operator who transfers a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream for treatment pursuant to § 63.132(g) shall include in the Notification of Compliance Status the name and location of the transferee and a description of the Group 1 wastewater stream or residual sent to the treatment facility. An owner or operator who transfers a Group 1 process vent for disposal pursuant to § 63.113(i) shall include in the Notification of Compliance Status the name and location of the transferee, and the identification of the Group 1 process vent.

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

(ix) For flares subject to the requirements in § 63.1436, the supplement to the Notification of Compliance Status shall include flare management plans, 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), as applicable; and all periods during the compliance determination when the pilot flame or flare flame is absent.

(x) For process vents subject to the requirements of § 63.1426(g), storage vessels subject to the requirements of § 63.1432(s), wastewater subject to the requirements of § 63.1433(a)(23), and heat exchange systems subject to the requirements of § 63.1435(i), the supplement to the Notification of Compliance Status shall identify all process vents, storage vessels, wastewater streams, and heat exchange systems that are in ethylene oxide service, identify the method(s) used to control ethylene oxide emissions from each process vent, storage vessel, and wastewater stream (i.e., use of a flare, scrubber, or other control device), and include the information specified in paragraphs (e)(5)(x)(A) through (D) of this section, as applicable.

(A) For process vents, all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations used to determine the total uncontrolled ethylene oxide mass emissions rate for the sum of all vent gas streams.

(B) For storage vessels, include the concentration of ethylene oxide of the fluid stored in each storage vessel.

(C) For wastewater, include the concentration of ethylene oxide of each wastewater stream. If you comply with § 63.1433(a)(23)(iii)(D), identify each individual wastewater stream, the combined ethylene oxide load prior to treatment, and how the combined ethylene oxide load was determined.

(D) For heat exchange systems, include the concentration of ethylene oxide of the process fluid cooled by the heat exchange system.

(xi) For adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, the supplement to the Notification of Compliance Status shall include the information listed in paragraphs (e)(5)(xi)(A) and (B) of this section.

(A) Whether the adsorber cannot be regenerated or is a regenerative adsorber(s) that is regenerated offsite.

(B) The breakthrough limit and adsorber bed life established during the initial performance test or design evaluation of the adsorber.

(6) *Periodic Reports.* For existing and new affected sources, the owner or operator shall submit Periodic Reports as specified in paragraphs (e)(6)(i) through (x) of this section. In addition, for equipment leaks subject to § 63.1434, the owner or operator shall submit the information specified in the HON periodic reporting requirements in § 63.182(d) as part of the Periodic Report required by this paragraph (e)(6), and for heat exchange systems subject to § 63.1434, the owner or operator shall submit the information specified in the HON heat exchange system reporting requirements in § 63.104(f)(2) as part of the Periodic Report required by this paragraph (e)(6). On and after March 18, 2029 or once the reporting template for this subpart has been available on the CEDRI website for 1 year, whichever date is later, owners and operators shall submit all subsequent reports following the procedure specified in § 63.9(k). Owners and operators shall use the appropriate electronic report template on the CEDRI website (https://www.epa.gov/electronic-reporting-air-emissions/cedri) for this subpart. The date report templates become available will be listed on the CEDRI website. 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), the report shall be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.

(i) Except as specified in paragraphs (e)(6)(viii) of this section, a report containing the information in paragraph (e)(6)(ii) of this section or paragraphs (e)(6)(iii) through (vii) of this section, as appropriate, shall be submitted semiannually no later than 60 days after the end of each 180-day period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due. Subsequent reports shall cover each preceding 6-month period. All periodic reports shall contain the company name and address (including county), as well as the beginning and ending dates of the reporting period.

(ii) If none of the compliance exceptions in paragraphs (e)(6)(iii) through (vii) of this section occurred during the 6-month period, the Periodic Report required by paragraph (e)(6)(i) of this section shall be a statement that there were no compliance exceptions, as described in this paragraph, for the 6-month period covered by that report and that none of the activities specified in paragraphs (e)(6)(iii) through (vii) of this section occurred during the period covered by that report.

(iii) For an owner or operator of an affected source complying with the provisions of §§ 63.1432, 63.1433, and 63.1434(i) for any emission point, Periodic Reports shall include:

(A) All information specified in the HON periodic reporting requirements in § 63.122(a)(4) for storage vessels and in § 63.146(c) through (f) for process wastewater. In addition, if you comply with § 63.1433(a)(23)(iii)(D) and annual sampling shows that the combined ethylene oxide load of the excluded wastewater streams prior to treatment is 1.0 megagram per year or greater, you must document this in the Periodic Report and also include the actual combined ethylene oxide load prior to treatment, how the combined load was determined, and sampling dates and results for each wastewater stream contributing to the combined load. Beginning no later than the compliance dates

specified in § 63.1422(h), include all information specified in § 63.130(d) for transfer racks. Beginning no later than the compliance dates specified in § 63.1422(h), for storage vessels in ethylene oxide service subject to the requirements of § 63.124, the Periodic Report must include the information specified in § 63.123(k)(2). Indicate the start date, start time, and duration in hours for each period.

(B) The daily average values or, for parameters used to comply with § 63.1425(g) or 63.1432(s)(3), the 1-hour block average values of monitored parameters for all excursions, as defined in § 63.1438(f). Beginning no later than the compliance dates specified in § 63.1422(h), for each excursion, report the start date, start time, duration in hours, cause, a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, actions taken to minimize emissions, and any corrective action taken to return the affected unit to its normal or usual manner of operation.

(C) The periods when monitoring data were not collected shall be specified and, beginning no later than the compliance dates specified in § 63.1422(h), including start date, start time, and duration in hours; and

(D) The information in paragraphs (e)(6)(iii)(D)(*1*) through (*3*) of this section, as applicable:

(*1*) Notification if a process change is made such that the group status of any emission point changes from Group 2 to Group 1. The owner or operator is not required to submit a notification of a process change if that process change caused the group status of an emission point to change from Group 1 to Group 2. However, until the owner or operator notifies the Administrator that the group status of an emission point has changed from Group 1 to Group 2, the owner or operator is required to continue to comply with the Group 1 requirements for that emission point. This notification may be submitted at any time.

(*2*) Notification if one or more emission points (other than equipment leak components subject to § 63.1434), or one or more PMPU is added to an affected source. The owner or operator shall submit the information contained in paragraphs (e)(6)(iii)(D)(*2*)(*i*) and (*ii*) of this section.

(*i*) A description of the addition to the affected source.

(*ii*) Notification of the group status or control requirement for the additional emission point or all emission points in the PMPU.

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

(E) Before March 18, 2029, the information in paragraph (b)(1)(ii) of this section for reports of malfunctions.

(iv) If any performance tests are reported in a Periodic Report, the following information shall be included:

(A) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (e)(5)(i)(B) of this section.

(B) For additional tests performed for the same kind of emission point using the same method, results and any other information required by the test method to be in the test report shall be submitted, but a complete test report is not required.

(C) If the performance test results have been submitted electronically through CEDRI in accordance with paragraph (e)(9) of this section, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted must be submitted in the Period Report in lieu of the information required in paragraphs (e)(6)(iv)(A) and (B) of this section. The performance test results must be submitted to CEDRI by the date the Periodic Report is submitted.

(v) The results for each change made to a primary product determination for a PMPU made under § 63.1420(e)(3) or (10).

(vi) The results for each reevaluation of the applicability of this subpart to a storage vessel that begins receiving material from (or sending material to) a process unit that was not included in the initial determination, or a storage vessel that ceases to receive material from (or send material to) a process unit that was included in the initial determination, in accordance with § 63.1420(f)(8).

(vii) The Periodic Report required by the equipment leak provisions in § 63.1434(f) shall be submitted as part of the Periodic Report required by paragraph (e)(6) of this section. Additionally, for equipment in ethylene oxide service, you must include the information in paragraphs (e)(6)(vii)(A) through (E) of this section in the Periodic Report. If there are more than five pieces of equipment in ethylene oxide service on delay of repair during the reporting period, include the total number of pieces of equipment in ethylene oxide service in the Periodic Report.

(A) Identification of each piece of equipment that is on delay of repair during the reporting period.

(B) The date that delay of repair began for each piece of equipment.

(C) An indication of whether the equipment has been successfully repaired, and if so, the date of successful repair (remonitoring date).

(D) An indication of whether the equipment has been isolated from the process such that it is no longer in ethylene oxide service, and if so, the date that the equipment was successfully isolated from the process.

(E) An indication of whether any monthly monitoring event resulted in an instrument reading of 1,000 parts per million or greater, and if so, the date of the monitoring event.

(viii) The owner or operator of an affected source shall submit quarterly reports for particular emission points and process sections as specified in paragraphs (e)(6)(viii)(A) through (D) of this section.

(A) The owner or operator of an affected source shall submit quarterly reports for a period of 1 year for an emission point or process section if the emission point or process section meets the conditions in paragraph (e)(6)(viii)(A)(*1*) or (*2*) of this section.

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

(*2*) The Administrator requests the owner or operator to submit quarterly reports for that emission point or process section.

(B) The quarterly reports shall include all information specified in paragraphs (e)(6)(iii) through (vii) of this section, as applicable to the emission point or process section for which quarterly reporting is required under paragraph (e)(6)(viii)(A) of this section. Information applicable to other emission points within the affected source shall be submitted in the semiannual reports required under paragraph (e)(6)(i) of this section.

(C) Quarterly reports shall be submitted no later than 60 days after the end of each quarter.

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

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

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

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

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

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

(*2*) The start date, start time, and duration in minutes of the pressure release.

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

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

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

(x) The information specified in § 63.108(l)(2) according to § 63.1436(b).

(7) *Other reports.* Other reports shall be submitted as specified in paragraphs (e)(7)(i) through (iii) of this section.

(i) For storage vessels, the notifications of inspections required by § 63.1432 shall be submitted, as specified in the HON storage vessel provisions in § 63.122(h)(1) and (2).

(ii) When the conditions at § 63.1420(e)(3)(iii), (e)(9), or (e)(10) are met, reports of changes to the primary product for a PMPU or process unit, as required by § 63.1420(e)(3)(iii), (e)(9), or (e)(10)(iii), respectively, shall be submitted.

(iii) Owners or operators of PMPU or emission points (other than equipment leak components subject to § 63.1434) that are subject to provisions for changes or additions to plant sites in § 63.1420(g)(1) or (2) shall submit a report as specified in paragraphs (e)(7)(iii)(A) and (B) of this section.

(A) Reports shall include:

(*1*) A description of the process change or addition, as appropriate;

(*2*) The planned start-up date and the appropriate compliance date, according to § 63.1420(g)(1) or (2); and

(*3*) Identification of the group status of emission points (except equipment leak components subject to the requirements in § 63.1434) specified in paragraphs (e)(7)(iii)(A)(*3*)(*i*) through (*iii*) of this section, as applicable.

(*i*) All the emission points in the added PMPU, as described in § 63.1420(g)(1).

(*ii*) All the emission points in an affected source designated as a new affected source under § 63.1420(g)(2)(i).

(*iii*) All the added or created emission points as described in § 63.1420(g)(2)(ii) or (iii).

(*4*) If the owner or operator wishes to request approval to use alternative monitoring parameters, alternative continuous monitoring or recordkeeping, alternative controls, or wishes to establish parameter monitoring levels according to the procedures contained in § 63.1438(c) or (d), a Precompliance Report shall be submitted in accordance with paragraph (e)(7)(iii)(B) of this section.

(B) Reports shall be submitted as specified in paragraphs (e)(7)(iii)(B)(*1*) through (*3*) of this section, as appropriate.

(*1*) Owners or operators of an added PMPU subject to § 63.1420(g)(1) shall submit a report no later than 180 days prior to the compliance date for the PMPU.

(*2*) Owners or operators of an affected source designated as a new affected source under § 63.1420(g)(2)(i) shall submit a report no later than 180 days prior to the compliance date for the affected source.

(*3*) Owners and operators of any emission point (other than equipment leak components subject to § 63.1434) subject to § 63.1420(g)(2)(ii) or (iii) shall submit a report no later than 180 days prior to the compliance date for those emission points.

(8) *Operating permit application.* An owner or operator who submits an operating permit application instead of a Precompliance Report shall submit the information specified in paragraph (e)(4) of this section, as applicable, with the operating permit application.

(9) *Electronic reporting of performance tests and performance evaluations.*

(i) Within 60 days after the date of completing each performance test (as defined in § 63.2), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, required by this subpart following the procedure specified in §63.9(k). Submit the data in a file format generated using the EPA's Electronic Reporting Tool (ERT). Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert) accompanied by the other information required by §63.7(g)(2) in PDF format.

(ii) Beginning no later than **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, within 60 days after the date of completing each continuous emissions monitoring system performance evaluation that includes a relative accuracy test audit, you must submit the results of the performance evaluation following the procedure specified in §63.9(k). The results must be in a file format generated using the EPA's Electronic Reporting Tool (ERT). Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert) accompanied by the other information required by §63.7(g)(2) in PDF format.

(f) *Alternative monitoring parameters.* The owner or operator who has been directed by any section of this subpart, or any section of another subpart referenced by this subpart, that specifically references this paragraph to set unique monitoring

parameters, or who requests approval to monitor a different parameter than those listed in § 63.1432 for storage vessels, § 63.1427 for ECO, § 63.1429 for process vents, or § 63.143 for process wastewater shall submit the information specified in paragraphs (f)(1) through (3) of this section in the Precompliance Report, as required by paragraph (e)(4) of this section. The owner or operator shall retain for a period of 5 years each record required by paragraphs (f)(1) through (3) of this section.

(1) The required information shall include a description of the parameter(s) to be monitored to ensure the combustion, recovery, or recapture device; control technique; or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).

(2) The required information shall include a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation, the schedule for this demonstration, and a statement that the owner or operator will establish a level for the monitored parameter as part of the Notification of Compliance Status report required in paragraph (e)(5) of this section, unless this information has already been included in the operating permit application.

(3) The required information shall include a description of the proposed monitoring, recordkeeping, and reporting system, to include the frequency and content of monitoring, recordkeeping, and reporting. Further, the rationale for the proposed monitoring, recordkeeping, and reporting system shall be included if either condition in paragraph (f)(3)(i) or (ii) of this section is met:

(i) If monitoring and recordkeeping is not continuous; or

(ii) If reports of daily average values will not be included in Periodic Reports when the monitored parameter value is above the maximum level or below the minimum level as established in the operating permit or the Notification of Compliance Status.

(g) *Alternative continuous monitoring and recordkeeping.* An owner or operator choosing not to implement the continuous parameter operating and recordkeeping provisions listed in § 63.1429 for process vents, and § 63.1433 for wastewater, may instead request approval to use alternative continuous monitoring and recordkeeping provisions according to the procedures specified in paragraphs (g)(1) through (4) of this section. Requests shall be submitted in the Precompliance Report as specified in paragraph (e)(4)(iv) of this section, and shall contain the information specified in paragraphs (g)(2)(ii) and (g)(3)(ii) of this section, as applicable.

(1) The provisions in the General Provisions requirements for the use of an alternative monitoring method in § 63.8(f)(5)(i) shall govern the review and approval of requests.

(2) An owner or operator of an affected source that does not have an automated monitoring and recording system capable of measuring parameter values at least once during approximately equal 15-minute intervals and that does not generate continuous records may request approval to use a nonautomated system with less frequent monitoring, in accordance with paragraphs (g)(2)(i) and (ii) of this section.

(i) The requested system shall include visual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily averages shall be calculated from these hourly values and recorded.

(ii) The request shall contain:

(A) A description of the planned monitoring and recordkeeping system;

(B) Documentation that the affected source does not have an automated monitoring and recording system;

(C) Justification for requesting an alternative monitoring and recordkeeping system; and

(D) Demonstration that the proposed monitoring frequency is sufficient to represent combustion, recovery, or recapture device operating conditions, considering typical variability of the specific process and combustion, recovery, or recapture device operating parameter being monitored.

(3) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example, once at approximately equal intervals of about 15 minutes), but that records all values that meet set criteria for variation from previously recorded values, in accordance with paragraphs (g)(3)(i) and (ii) of this section.

(i) The requested system shall be designed to:

(A) Measure the operating parameter value at least once during approximately equal 15-minute intervals;

(B) Record at least four values each hour during periods of operation;

(C) Record the date and time when monitors are turned off or on;

(D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident;

(E) Calculate daily average values of the monitored operating parameter based on all measured data; and

(F) If the daily average is not an excursion, as defined in § 63.1438(f), the data for that operating day may be converted to hourly average values and the four or more individual records for each hour in the operating day may be discarded.

(ii) The request shall contain:

(A) A description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained;

(B) The method for calculating daily averages; and

(C) A demonstration that the system meets all criteria in paragraph (g)(3)(i) of this section.

(4) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in the General Provisions' requirements for using an alternative monitoring method in § 63.8(f)(4).

(h) *Reduced recordkeeping program.* For any parameter with respect to any item of equipment, the owner or operator may implement the recordkeeping requirements in paragraph (h)(1) or (2) of this section as alternatives to the continuous operating parameter monitoring and recordkeeping provisions that would otherwise apply under this subpart. The owner or operator shall retain for a period of 5 years each record required by paragraph (h)(1) or (2) of this section.

(1) The owner or operator may retain only the daily average value, and is not required to retain more frequent monitored operating parameter values, for a monitored parameter with respect to an item of equipment, if the requirements of paragraphs (h)(1)(i) through (iv) of this section are met. An owner or operator electing to comply with the requirements of paragraph (h)(1) of this section shall notify the Administrator in the Notification of Compliance Status or, if the Notification of Compliance Status has already been submitted, in the Periodic Report immediately preceding implementation of the requirements of paragraph (h)(1) of this section.

(i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation (e.g., a temperature reading of −200 °C on a boiler), and will alert the operator by alarm or other means. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this running average is readily available

to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (h)(1)(ii)(A) and (B) of this section. All instances in an operating day constitute a single occurrence.

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

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

(iii) The monitoring system is capable of detecting unchanging data during periods of operation, except in circumstances where the presence of unchanging data are the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(iv) The monitoring system will alert the owner or operator by an alarm or other means, if the running average parameter value calculated under paragraph (h)(1)(ii) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.

(v) The owner or operator shall verify the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (h)(1) of this section, at the times specified in paragraphs (h)(1)(v)(A) through (C) of this section. The owner or operator shall document that the required verifications occurred.

(A) Upon initial installation.

(B) Annually after initial installation.

(C) After any change to the programming or equipment constituting the monitoring system, which might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.

(vi) The owner or operator shall retain the records identified in paragraphs (h)(1)(vi)(A) through (D) of this section.

(A) Identification of each parameter, for each item of equipment, for which the owner or operator has elected to comply with the requirements of paragraph (h) of this section.

(B) A description of the applicable monitoring system(s), and how compliance will be achieved with each requirement of paragraphs (h)(1)(i) through (v) of this section. The description shall identify the location and format (e.g., on-line storage, log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent superseded description, as specified in paragraph (h)(1)(vi)(D) of this section.

(C) A description, and the date, of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (h)(1) of this section.

(D) The owner or operator subject to paragraph (h)(1)(vi)(B) of this section shall retain the current description of the monitoring system as long as the description is current. The current description shall, at all times, be retained on-site or be accessible from a central location by computer or other means that provides access within 2 hours after a request. The owner or operator shall retain all superseded descriptions for at least 5 years after the date of their creation. Superseded descriptions shall be retained on-site (or accessible from a central location by computer or other means that provides access within 2 hours after a request) for at least 6 months after their creation. Thereafter, superseded descriptions may be stored off-site.

(2) If an owner or operator has elected to implement the requirements of paragraph (h)(1) of this section for a monitored parameter with respect to an item of equipment and a period of 6 consecutive months has passed without an excursion as

defined in paragraph (h)(2)(iv) of this section, the owner or operator is no longer required to record the daily average value, for any operating day when the daily average is less than the maximum, or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months, if the parameter limit and the monitoring accomplished during the period prior to the compliance date was required and/or approved by the Administrator.

(i) If the owner or operator elects not to retain the daily average values, the owner or operator shall notify the Administrator in the next Periodic Report. The notification shall identify the parameter and unit of equipment.

(ii) If, on any operating day after the owner or operator has ceased recording daily average values as provided in paragraph (h)(2) of this section, there is an excursion as defined in paragraph (h)(2)(iv) of this section, the owner or operator shall immediately resume retaining the daily average value for each operating day and shall notify the Administrator in the next Periodic Report. The owner or operator shall continue to retain each daily average value until another period of 6 consecutive months has passed without an excursion as defined in paragraph (h)(2)(iv) of this section.

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

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

23. Revise tables 1 through 3 to subpart PPP of part 63 to read as follows:

Table 1 to Subpart PPP of Part 63—Applicability of General Provisions to Subpart PPP Affected Sources

Reference	Applies to subpart PPP	Explanation
§ 63.1(a)(1)	Yes.	§ 63.1423 specifies definitions in addition to or that supersede definitions in § 63.2.
§ 63.1(a)(2)	Yes.	
§ 63.1(a)(3)	Yes.	§ 63.1422(f) through (k) of this subpart and § 63.160(b) identify those standards which overlap with the requirements of subparts PPP and H and specify how compliance shall be achieved.
§ 63.1(a)(4)	Yes.	Subpart PPP (this table) specifies the applicability of each paragraph in subpart A to subpart PPP.
§ 63.1(a)(5)	No.	Reserved.
§ 63.1(a)(6)	Yes.	
§ 63.1(a)(7)-(9)	No.	Reserved.
§ 63.1(a)(10)	Yes.	
§ 63.1(a)(11)	Yes.	
§ 63.1(a)(12)-(14)	Yes.	
§ 63.1(b)(1)	No.	§ 63.1420(a) contains specific applicability criteria.
§ 63.1(b)(2)	Yes.	
§ 63.1(b)(3)	Yes.	
§ 63.1(c)(1)	Yes.	Subpart PPP (this table) specifies the applicability of each paragraph in subpart A to subpart PPP.
§ 63.1(c)(2)	No.	Area sources are not subject to subpart PPP.
§ 63.1(c)(3)	No.	Reserved.
§ 63.1(c)(4)	No.	Reserved.
§ 63.1(c)(5)	Yes.	Except that affected sources are not required to submit notifications overridden by this table.
§ 63.1(c)(6)	Yes.	
§ 63.1(d)	No.	Reserved.
§ 63.1(e)	Yes.	
§ 63.2	Yes.	§ 63.1423 specifies those subpart A definitions that apply to subpart PPP.

§ 63.3	Yes.	
§ 63.4(a)(1)-(3)	Yes.	
§ 63.4(a)(4)	No.	Reserved.
§ 63.4(a)(5)	Yes.	
§ 63.4(b)	Yes.	
§ 63.4(c)	Yes.	
§ 63.5(a)(1)	Yes.	Except the terms “source” and “stationary source” should be interpreted as having the same meaning as “affected source.”
§ 63.5(a)(2)	Yes.	
§ 63.5(b)(1)	Yes.	Except § 63.1420(g) defines when construction or reconstruction is subject to new source standards.
§ 63.5(b)(2)	No.	Reserved.
§ 63.5(b)(3)	Yes.	
§ 63.5(b)(4)	Yes.	Except that the initial notification requirements in § 63.1439(e)(3) shall apply instead of the requirements in § 63.9(b).
§ 63.5(b)(5)	Yes.	
§ 63.5(b)(6)	Yes.	Except that § 63.1420(g) defines when construction or reconstruction is subject to the new source standards.
§ 63.5(c)	No.	Reserved.
§ 63.5(d)(1)(i)	Yes.	
§ 63.5(d)(1)(ii)	Yes.	Except that § 63.5(d)(1)(ii)(H) does not apply.
§ 63.5(d)(1)(iii)	No.	§ 63.1439(e)(5) and § 63.1434(e) specify notification of compliance status requirements.
§ 63.5(d)(2)	No.	
§ 63.5(d)(3)	Yes.	Except § 63.5(d)(3)(ii) does not apply, and equipment leaks subject to § 63.1434 are exempt.
§ 63.5(d)(4)	Yes.	
§ 63.5(e)	Yes.	
§ 63.5(f)(1)	Yes.	
§ 63.5(f)(2)	Yes.	Except that where § 63.9(b)(2) is referred to, the owner or operator need not comply.
§ 63.6(a)	Yes.	
§ 63.6(b)(1)	Yes.	
§ 63.6(b)(2)	Yes.	
§ 63.6(b)(3)	Yes.	

§ 63.6(b)(4)	Yes.	
§ 63.6(b)(5)	Yes.	
§ 63.6(b)(6)	No.	Reserved.
§ 63.6(b)(7)	No.	
§ 63.6(c)(1)	Yes.	§ 63.1422 specifies the compliance date.
§ 63.6(c)(2)	No.	
§ 63.6(c)(3)	No.	Reserved.
§ 63.6(c)(4)	No.	Reserved.
§ 63.6(c)(5)	Yes.	
§ 63.6(d)	No.	Reserved.
§ 63.6(e)(1)(i)	No.	See § 63.1420(h)(4) for general duty requirement.
§ 63.6(e)(1)(ii)	No.	
§ 63.6(e)(1)(iii)	Yes.	
§ 63.6(e)(2)	No.	Reserved.
§ 63.6(e)(3)	No.	
§ 63.6(f)(1)	No.	
§ 63.6(f)(2)	Yes.	Except § 63.7(c), as referred to in § 63.6(f)(2)(iii)(D) does not apply, and except that § 63.6(f)(2)(ii) does not apply to equipment leaks subject to § 63.1434.
§ 63.6(f)(3)	Yes.	
§ 63.6(g)	Yes.	
§ 63.6(h)	No.	Subpart PPP does not require opacity and visible emission standards.
§ 63.6(i)(1)	Yes.	
§ 63.6(i)(2)	Yes.	
§ 63.6(i)(3)	Yes.	
§ 63.6(i)(4)(i)(A)	Yes.	
§ 63.6(i)(4)(i)(B)	No.	Dates are specified in § 63.1422(e) and § 63.1439(e)(4)(i) for all emission points except equipment leaks, which are covered under § 63.182(a)(6)(i).
§ 63.6(i)(4)(ii)	No.	
§ 63.6(i)(5)-(14)	Yes.	
§ 63.6(i)(15)	No.	Reserved.

§ 63.6(i)(16)	Yes.	
§ 63.6(j)	Yes.	
§ 63.7(a)(1)	Yes.	
§ 63.7(a)(2)	No.	§ 63.1439(e) (5) and (6) specify the submittal dates of performance test results for all emission points except equipment leaks; for equipment leaks, compliance demonstration results are reported in the Periodic Reports.
§ 63.7(a)(3)	Yes.	
§ 63.7(a)(4)	Yes.	
§ 63.7(b)	No.	§ 63.1437(a)(4) specifies notification requirements.
§ 63.7(c)	No.	Except if the owner or operator chooses to submit an alternative nonopacity emission standard for approval under § 63.6(g).
§ 63.7(d)	Yes.	
§ 63.7(e)(1)	No.	See § 63.1437(a).
§ 63.7(e)(2)	Yes.	
§ 63.7(e)(3)	No.	Subpart PPP specifies requirements. See § 63.1426(c) and (g).
§ 63.7(e)(4)	Yes.	
§ 63.7(f)	Yes.	Since a site-specific test plan is not required, the notification deadline in § 63.7(f)(2)(i) shall be 60 days prior to the performance test, and in § 63.7(f)(3) approval or disapproval of the alternative test method shall not be tied to the site-specific test plan.
§ 63.7(g)	Yes.	Except the notification of compliance status report requirements in § 63.1439(e)(5) shall apply instead of those in §§ 63.9(h) and 63.1439(e)(9) specified how and when to submit performance test and performance evaluation results. In addition, equipment leaks subject to § 63.1434 are not required to conduct performance tests.
§ 63.7(h)	Yes.	Except § 63.7(h)(4)(ii) is not applicable, since the site-specific test plans in § 63.7(c)(2) are not required.
§ 63.8(a)(1)	Yes.	
§ 63.8(a)(2)	No.	
§ 63.8(a)(3)	No.	Reserved.
§ 63.8(a)(4)	Yes.	Except for flares subject to § 63.1436.
§ 63.8(b)(1)	Yes.	
§ 63.8(b)(2)	No.	Subpart PPP specifies locations to conduct monitoring.
§ 63.8(b)(3)	Yes.	

§ 63.8(c)(1)	Yes.	
§ 63.8(c)(1)(i)	No.	See § 63.1420(h)(4) for general duty requirement.
§ 63.8(c)(1)(ii)	No.	
§ 63.8(c)(1)(iii)	No.	
§ 63.8(c)(2)	Yes.	
§ 63.8(c)(3)	Yes.	
§ 63.8(c)(4)	No.	§ 63.1438 specifies monitoring requirements; not applicable to equipment leaks, because § 63.1434 does not require continuous monitoring systems.
§ 63.8(c)(5)-(8)	No.	
§ 63.8(d)	No.	
§ 63.8(e)	Yes.	Yes, but only applies for CEMS, except this subpart specifies how and when the performance evaluation results are reported.
§ 63.8(f)(1)-(3)	Yes.	
§ 63.8(f)(4)(i)	Yes.	Except the timeframe for submitting request is specified in § 63.1439(f) or (g); not applicable to equipment leaks, because § 63.1434 (through subpart H of this part) specifies acceptable alternative methods.
§ 63.8(f)(4)(ii)	Yes.	
§ 63.8(f)(4)(iii)	Yes.	
§ 63.8(f)(5)(i)	Yes.	
§ 63.8(f)(5)(ii)	No.	
§ 63.8(f)(5)(iii)	Yes.	
§ 63.8(f)(6)	Yes.	Subpart PPP does not require CEMS except it allows the option to use CEMS for process vents and storage vessels in ethylene oxide service.
§ 63.8(g)	Yes.	Applies only to CEMS. Other data reduction procedures specified in § 63.1439(d) and (h); not applicable to equipment leaks.
§ 63.9(a)	Yes.	
§ 63.9(b)	No.	The initial notification requirements are specified in § 63.1439(e)(3).
§ 63.9(c)	Yes.	
§ 63.9(d)	Yes.	
§ 63.9(e)	No.	§ 63.1437(a)(4) specifies notification deadline.

§ 63.9(f)	No.	Subpart PPP does not require opacity and visible emission standards.
§ 63.9(g)	No.	
§ 63.9(h)	No.	§ 63.1439(e)(5) specifies notification of compliance status requirements.
§ 63.9(i)	Yes.	
§ 63.9(j)	Yes.	For change in major source status only.
§ 63.9(k)	Yes.	
§ 63.10(a)	Yes.	
§ 63.10(b)(1)	No.	§ 63.1439(a) specifies record retention requirements.
§ 63.10(b)(2)	No.	This subpart specifies recordkeeping requirements including in §§ 63.1430(a) and 63.1439(b).
§ 63.10(b)(3)	Yes.	
§ 63.10(c)	No.	§ 63.1439 specifies recordkeeping requirements.
§ 63.10(d)(1)	Yes.	
§ 63.10(d)(2)	No.	§ 63.1439(e)(9) specifies performance test reporting requirements; not applicable to equipment leaks.
§ 63.10(d)(3)	No.	Subpart PPP does not require opacity and visible emission standards.
§ 63.10(d)(4)	Yes.	
§ 63.10(d)(5)	No.	This subpart specifies reporting requirements in § 63.1439.
§ 63.10(e)	No.	§ 63.1439 specifies reporting requirements.
§ 63.10(f)	Yes.	
§ 63.11	Yes.	Except § 63.11(b) does not apply as specified in § 63.1436.
§ 63.12	Yes.	Except that the authority of § 63.177 (for equipment leaks) will not be delegated to states.
§ 63.13-63.15	Yes.	

Table 2 to Subpart PPP of Part 63—Applicability of HON and Group 1 Polymers and Resins Provisions to Subpart PPP Affected Sources

Reference	Applies to subpart PPP	Explanation	Applicable section of subpart PPP
Subpart F:			
§ 63.100	No.		

§ 63.101	Yes.	Several definitions from § 63.101 are referenced at § 63.1423.	§ 63.1423
§§ 63.102 - 63.103	No.		
§ 63.104	Yes.	With the differences noted in § 63.1435(b) through (i).	§ 63.1435
§ 63.105	Yes.	With the differences noted in § 63.1433(b).	§ 63.1433
§ 63.106	No.		
Subpart G:			
§ 63.107	No.		
§ 63.108	Yes.	With the differences noted in § 63.1436(b).	
§ 63.109	Yes.	With the differences noted in the definition of “in ethylene oxide service” in § 63.1423(b).	
§ 63.110	No.		
§ 63.111	No.		
§ 63.112	No.		
§§ 63.113-63.118	Yes.	For THF facilities, with the differences noted in § 63.1425(f)(1) through (15).	§ 63.1425
	No.	For epoxide facilities, except that § 63.115(d) is used for TRE determinations.	§ 63.1428
§§ 63.119-63.123	Yes.	With the differences noted in § 63.1432(b) through 63.1432(w).	§ 63.1432
§ 63.124	Yes.	With the differences noted in §§ 63.1426(g) and 63.1432(w).	§§ 63.1426 and 63.1432
§ 63.125	No.	Reserved.	
§§ 63.126-63.130	Yes.	With the differences noted in paragraphs § 63.1434(i)(1) through (13).	§ 63.1434
§ 63.131	No.	Reserved.	
§§ 63.132-63.147	Yes.	With the differences noted in § 63.1433(a)(1) through (26).	§ 63.1433

§§ 63.148-63.149	Yes.	With the differences noted in §§ 63.1432(b) through (v) and 63.1433(a)(1) through (26).	§§ 63.1432 and 63.1433
§ 63.150	No.		
§§ 63.151-63.152	No.		
§ 63.153	No.		§ 63.1421
Subpart H:			
§§ 63.160-63.182	Yes.	Subpart PPP affected sources shall comply with all requirements of subpart H to this part, with the differences noted in §§ 63.1422(d) and 63.1434.	§ 63.1434
§ 63.183	No.		§ 63.1421
§ 63.184	No.		
Subpart U:			
§§ 63.480-63.487	No.		
§ 63.488	Yes.	Portions of § 63.488(b) and (e) are cross-referenced in subpart PPP.	
§§ 63.489-63.506	No.		

Table 3 to Subpart PPP of Part 63—Group 1 Storage Vessels at Existing and New Affected Sources

Vessel capacity (cubic meters)	Vapor pressure[a] (kilopascals)
75 ≤capacity <151[b]	≥13.1[b]
38 ≤capacity <151[c]	≥6.9[c]
capacity ≥151	≥5.2

[a] Maximum true vapor pressure of total organic HAP at storage temperature.
[b] Beginning no later than the compliance dates specified in § 63.1422(h), these vessel capacity and vapor pressure criteria no longer apply.
[c] Beginning no later than the compliance dates specified in § 63.1422(h), these vessel capacity and vapor pressure criteria apply.

24. Amend table 4 to subpart PPP of part 63 by adding entries “Butylene Oxide” and “(106887)” after the entry “(106990)” to read as follows:

Table 4 to Subpart PPP of Part 63—Known Organic HAP From Polyether Polyol Products

Organic HAP/chemical name [CAS No.]
* * * * * * *
Butylene Oxide
(106887)
* * * * * * *

25. Revise tables 5 and 6 to subpart PPP of part 63 to read as follows:

Table 5 to Subpart PPP of Part 63—Process Vents From Batch Unit Operations—Monitoring, Recordkeeping, and Reporting Requirements

Control technique	Parameter to be monitored	Recordkeeping and reporting requirements for monitored parameters
Thermal Incinerator, other than a thermal oxidizer used to comply with § 63.1425(g)	Firebox temperature.[a]	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average firebox temperature measured during the performance test—NCS.[c] 3. Record the daily average firebox temperature as specified in § 63.1429. 4. Report all daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.[d,e]
Thermal oxidizer used to comply with § 63.1425(g)	Combustion chamber temperature [§§ 63.124(b)(5)(i) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the combustion chamber temperature averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block average combustion chamber temperature for each operating day. 4. Report all 1-hour block temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]

	Flue gas flow rate [§§ 63.124(b)(5)(ii) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the flue gas flow rate averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block average flue gas flow rate for each operating day. 4. Report all 1-hour block flue gas flow rates that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR. [d,e]
Catalytic Incinerator	Temperature upstream and downstream of the catalyst bed.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average upstream and downstream temperatures and the average temperature difference across the catalyst bed measured during the performance test—NCS.[c] 3. Record the daily average upstream temperature and temperature difference across catalyst bed as specified in § 63.1429. 4. Report all daily average upstream temperatures that are below the minimum upstream temperature established in the NCS or operating permit—PR.[d e] 5. Report all daily average temperature differences across the catalyst bed that are below the minimum difference established in the NCS or operating permit—PR.[d e] 6. Report all instances when monitoring data are not collected.[e]
Boiler or Process Heater with a design heat input capacity less than 44 megawatts and where the process vents are *not* introduced with or used as the primary fuel	Firebox temperature.[a]	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average firebox temperature measured during the performance test—NCS[c]. 3. Record the daily average firebox temperature as specified in § 63.1429.[d] 4. Report all daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.[d e]

Flare (if meeting the requirements of § 63.1426(a)(1))	Presence of a flame at the pilot light.	1. Hourly records of whether the monitor was continuously operating during batch emission episodes selected for control and whether a flame was continuously present at the pilot light during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.[c] 3. Record the times and durations of all periods during batch emission episodes when all flames at the pilot light of a flare are absent or the monitor is not operating. 4. Report the times and durations of all periods during batch emission episodes selected for control when all flames at the pilot light of a flare are absent—PR.[d]
Flare (if meeting the requirements of § 63.1426(a)(2))	The parameters are specified in §§ 63.108 and 63.1436.	1. Records as specified in §§ 63.108(m) and 63.1436. 2. Report information as specified in §§ 63.108(l) and 63.1436—PR.[d]
Absorber[f]	Liquid flow rate into or out of the scrubber, or the pressure drop across the scrubber.	1. Records every 15 minutes, as specified in § 63.1429.[b] 2. Record and report the average liquid flow rate into or out of the scrubber, or the pressure drop across the scrubber, measured during the performance test—NCS. 3. Record the liquid flow rate into or out of the scrubber, or the pressure drop across the scrubber, every 15 minutes, as specified in § 63.1429. 4. Report all scrubber flow rates or pressure drop values that are below the minimum operating value established in the NCS or operating permit and all instances when monitoring data are not collected—PR.[d e]

	pH of the scrubber.	1. Once daily records as specified in § 63.1429.[b] 2. Record and report the average pH of the scrubber effluent measured during the performance test—NCS.[c] 3. Record at least once daily the pH of the scrubber effluent. 4. Report all pH scrubber effluent readings out of the range established in the NCS or operating permit and all instances when monitoring data are not collected—PR.[d e] If a base absorbent is used, report all pH values that are below the minimum operating values. If an acid absorbent is used, report all pH values that are above the maximum operating values.
Condenser[f]	Exit (product side) temperature.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average exit temperature measured during the performance test—NCS. 3. Record the daily average exit temperature as specified in § 63.1429. 4. Report all daily average exit temperatures that are above the maximum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.[d e]
Carbon Adsorber[f]	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s), and	1. Record of total regeneration stream mass or volumetric flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass or volumetric flow during each carbon bed regeneration cycle during the performance test—NCS.[c] 3. Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is above the maximum flow rate established in the NCS or operating permit—PR.[d e]

	Temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle(s).	1. Record the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s). 2. Record and report the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s) measured during the performance test—NCS.[c] 3. Report all carbon bed regeneration cycles when the temperature of the carbon bed after regeneration, or within 15 minutes of completing any cooling cycle(s), is above the maximum temperature established in the NCS or operating permit—PR.[d e]
	Outlet HAP or TOC concentration.	Beginning no later than the compliance dates specified in § 63.1422(h), for each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.1429(a)(9), the owner or operator shall record each outlet HAP or TOC concentration measured according to § 63.1429(a)(9)(i) and (ii).
	Adsorbent replacement.	Beginning no later than the compliance dates specified in § 63.1422(h), for each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.1429(a)(9), the owner or operator must record date and time the adsorbent was last replaced.
	Breakthrough.	Beginning no later than the compliance dates specified in § 63.1422(h), for each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.1429(a)(9), the owner or operator must: 1. Record breakthrough limit and bed life established according to § 63.1429(a)(9)(i). 2. Report the date of each instance when breakthrough, as defined in § 63.101, is detected between the first and second adsorber and the adsorber is not

		replaced according to § 63.1429(a)(9)(iii)(A)—PR.[g]
Scrubber with a reactant tank used to comply with § 63.1425(g)	Liquid-to-gas ratio [§§ 63.124(b)(4)(i) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the L/G of the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block L/G of the scrubber for each operating day. 4. Report all 1-hour block L/G values of the scrubber that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	In lieu of liquid-to-gas ratio, scrubber total liquid flow rate and gas flow rate through scrubber [§§ 63.124(b)(4)(i) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report both the total scrubber liquid flow rate and gas flow rate through the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block total scrubber liquid flow rate and each 1-hour block gas flow rate through the scrubber for each operating day. 4. Report all 1-hour block total scrubber liquid flow rate values and all 1-hour block gas flow rate through the scrubber values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	pH of liquid in reactant tank [§§ 63.124(b)(4)(ii) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the pH of liquid in reactant tank averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block pH of liquid in reactant tank for each operating day. 4. Report all 1-hour block values of the pH of liquid in reactant tank that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Pressure drop [§§ 63.124(b)(4)(iii) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the pressure drop of the scrubber averaged over the full period of the performance test—NCS.[c]

		3. Record each 1-hour block pressure drop of the scrubber for each operating day. 4. Report all 1-hour block pressure drop values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Temperature of scrubbing liquid entering column [§§ 63.124(b)(4)(iv) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the temperature of scrubbing liquid entering column averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block temperature of scrubbing liquid entering column for each operating day. 4. Report all 1-hour block values of the temperature of scrubbing liquid entering column that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Liquid feed pressure [§§ 63.124(b)(4)(v) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the liquid feed pressure of the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block liquid feed pressure of the scrubber for each operating day. 4. Report all 1-hour block liquid feed pressure values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
Absorber, Condenser, and Carbon Adsorber (as an alternative to the above)	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average concentration level or reading measured during the performance test—NCS. 3. Record the daily average concentration level or reading as specified in § 63.1429.
		4. Report all daily average concentration levels or readings that are

		above the maximum concentration or reading established in the NCS or operating permit and all instances when monitoring data are not collected—PR.[d] [e]
All Combustion, recovery, or recapture devices	Diversion to the atmosphere from the combustion, recovery, or recapture device or	1. Hourly records of whether the flow indicator was operating during batch emission episodes selected for control and whether a diversion was detected at any time during the hour, as specified in § 63.1429. 2. Record and report the times of all periods during batch emission episodes selected for control when emissions are diverted through a bypass line, or the flow indicator is not operating—PR.[d] 3. Beginning no later than the compliance dates specified in § 63.1422(h), record and report 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—PR.[d]
	Monthly inspections of sealed valves.	1. Records that monthly inspections were performed as specified in § 63.1429. 2. Record and report all monthly inspections that show that valves are in the diverting position or that a seal has been broken—PR.[d] 3. For each affected source as described in § 63.1420(a), beginning no later than the compliance dates specified in § 63.1422(h), record and report 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—PR.[d]

ECO	Time from the end of the epoxide feed, or the epoxide partial pressure in the reactor or direct measurement of epoxide concentration in the reactor liquid at the end of the ECO	1. Records at the end of each batch, as specified in § 63.1427(i). 2. Record and report the average parameter value of the parameters chosen, measured during the performance test. 3. Record the batch cycle ECO duration, epoxide partial pressure, or epoxide concentration in the liquid at the end of the ECO 4. Report all batch cycle parameter values outside of the ranges established in accordance with § 63.1427(i)(3), all batch cycles as described in § 63.1427(k)(3)(ii), and all instances when monitoring data were not collected—PR.[d e]

[a] Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

[b] "Continuous records" is defined in § 63.101.

[c] NCS = Notification of Compliance Status described in § 63.1429.

[d] PR = Periodic Reports described in § 63.1429.

[e] The periodic reports shall include the duration of periods when monitoring data are not collected as specified in § 63.1439.

[f] Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

Table 6 to Subpart PPP of Part 63—Process Vents From Continuous Unit Operations—Monitoring, Recordkeeping, and Reporting Requirements

Control technique	Parameter to be monitored	Recordkeeping and reporting requirements for monitored parameters
Thermal Incinerator, other than a thermal oxidizer used to comply with § 63.1425(g)	Firebox temperature.[a]	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average firebox temperature measured during the performance test—NCS.[c] 3. Record the daily average firebox temperature for each operating day. 4. Report all daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when sufficient monitoring data are not collected—PR.[d e]

Thermal oxidizer used to comply with § 63.1425(g)	Combustion chamber temperature [§§ 63.124(b)(5)(i) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the combustion chamber temperature averaged over the full period of the performance test—NCS[c] 3. Record each 1-hour block average firebox temperature for each operating day. 4. Report all 1-hour block temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Flue gas flow rate [§§ 63.124(b)(5)(ii) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the flue gas flow rate averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block average flue gas flow rate for each operating day. 4. Report all 1-hour block flue gas flow rates that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR. [d,e]
Catalytic Incinerator	Temperature upstream and downstream of the catalyst bed.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average upstream and downstream temperatures and the average temperature difference across the catalyst bed measured during the performance test—NCS[c] 3. Record the daily average upstream temperature and temperature difference across catalyst bed for each operating day. 4. Report all daily average upstream temperatures that are below the minimum upstream temperature established in the NCS or operating permit—PR.[d e] 5. Report all daily average temperature differences across the catalyst bed that are below the minimum difference established in

		the NCS or operating permit—PR.[d] [e] 6. Report all operating days when insufficient monitoring data are collected.[e]
Boiler or Process Heater with a design heat input capacity less than 44 megawatts and where the process vents are *not* introduced with or used as the primary fuel	Firebox temperature.[a]	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the average firebox temperature measured during the performance test—NCS[c] 3. Record the daily average firebox temperature for each operating day.[d] 4. Report all daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when insufficient monitoring data are collected—PR.[d] [e]

Flare (if meeting the requirements of § 63.1426(a)(1))	Presence of a flame at the pilot light.	1. Hourly records of whether the monitor was continuously operating and whether a flame was continuously present at the pilot light during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.[c] 3. Record the times and durations of all periods when all flames at the pilot light of a flare are absent or the monitor is not operating. 4. Report the times and durations of all periods when all flames at the pilot light of a flare are absent—PR.[d]
Flare (if meeting the requirements of § 63.1426(a)(2))	The parameters are specified in §§ 63.108 and 63.1436.	1. Records as specified in §§ 63.108(m) and 63.1436. 2. Report information as specified in §§ 63.108(l) and 63.1436—PR.[d]
Absorber[f]	Exit temperature of the absorbing liquid, and	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the TRE determination—NCS.[c] 3. Record the daily average exit temperature of the absorbing liquid for each operating day. 4. Report all the daily average exit temperatures of the absorbing liquid that are below the minimum operating value established in the NCS or operating permit—PR.[d e]

	Exit specific gravity for the absorbing liquid.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the exit specific gravity averaged over the full period of the TRE determination—NCS. 3. Record the daily average exit specific gravity for each operating day. 4. Report all daily average exit specific gravity values that are below the minimum operating value established in the NCS or operating permit—PR.[d e]
Condenser[f]	Exit (product side) temperature.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the exit temperature averaged over the full period of the TRE determination—NCS. 3. Record the daily average exit temperature for each operating day. 4. Report all daily average exit temperatures that are above the maximum operating temperature established in the NCS or operating permit—PR.[d e]
Carbon Adsorber[f]	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s), and	1. Record of total regeneration stream mass or volumetric flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass or volumetric flow during each carbon bed regeneration cycle during the period of the TRE determination—NCS.[c] 3. Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is above the maximum flow rate established in the NCS or operating permit—PR.[d e]

	Temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle(s).	1. Record the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s). 2. Record and report the temperature of the carbon bed after each regeneration during the period of the TRE determination—NCS[c] 3. Report all carbon bed regeneration cycles when the temperature of the carbon bed after regeneration is above the maximum temperature established in the NCS or operating permit—PR.[d e]
	Outlet HAP or TOC concentration.	Beginning no later than the compliance dates specified in § 63.1422(h), for each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.1429(a)(9), the owner or operator must record each outlet HAP or TOC concentration measured according to § 63.1429(a)(9)(i) and (ii).
	Adsorbent replacement.	Beginning no later than the compliance dates specified in § 63.1422(h), for each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.1429(a)(9), the owner or operator must record date and time the adsorbent was last replaced.
	Breakthrough.	Beginning no later than the compliance dates specified in § 63.1422(h), for each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.1429(a)(9), the owner or operator must: 1. Record breakthrough limit and bed life established according to § 63.1429(a)(9)(i). 2. Report the date of each instance when breakthrough, as defined in §

		63.101, is detected between the first and second adsorber and the adsorber is not replaced according to § 63.1429(a)(9)(iii)(A)—PR.[g]
Scrubber with a reactant tank used to comply with § 63.1425(g)	Liquid-to-gas ratio [§§ 63.124(b)(4)(i) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the L/G of the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block L/G of the scrubber for each operating day. 4. Report all 1-hour block L/G values of the scrubber that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	In lieu of liquid-to-gas ratio, scrubber total liquid flow rate and gas flow rate through scrubber [§§ 63.124(b)(4)(i) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report both the total scrubber liquid flow rate and gas flow rate through the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block total scrubber liquid flow rate and each 1-hour block gas flow rate through the scrubber for each operating day. 4. Report all 1-hour block total scrubber liquid flow rate values and all 1-hour block gas flow rate through the scrubber values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	pH of liquid in reactant tank [§§ 63.124(b)(4)(ii) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the pH of liquid in reactant tank averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block pH of liquid in reactant tank for each operating day. 4. Report all 1-hour block values of the pH of liquid in reactant tank that are outside the range established in the NCS or operating

		permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Pressure drop [§§ 63.124(b)(4)(iii) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the pressure drop of the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block pressure drop of the scrubber for each operating day. 4. Report all 1-hour block pressure drop values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Temperature of scrubbing liquid entering column [§§ 63.124(b)(4)(iv) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the temperature of scrubbing liquid entering column averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block temperature of scrubbing liquid entering column for each operating day. 4. Report all 1-hour block values of the temperature of scrubbing liquid entering column that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]
	Liquid feed pressure [§§ 63.124(b)(4)(v) and 63.1426(g)].	1. Continuous records.[b] 2. Record and report the liquid feed pressure of the scrubber averaged over the full period of the performance test—NCS.[c] 3. Record each 1-hour block liquid feed pressure of the scrubber for each operating day. 4. Report all 1-hour block liquid feed pressure values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected—PR.[d,e]

Absorber, Condenser, and Carbon Adsorber (as an alternative to the above)	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device.	1. Continuous records as specified in § 63.1429.[b] 2. Record and report the concentration level or reading averaged over the full period of the TRE determination—NCS. 3. Record the daily average concentration level or reading for each operating day. 4. Report all daily average concentration levels or readings that are above the maximum concentration or reading established in the NCS or operating permit—PR.[d e]
All Combustion, recovery, or recapture devices	Diversion to the atmosphere from the combustion, recovery, or recapture device *or*	1. Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour, as specified in § 63.1429. 2. Record and report the times of all periods when the vent stream is diverted through a bypass line, or the flow indicator is not operating—PR.[d] 3. Beginning no later than the compliance dates specified in § 63.1422(h), record and report 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—PR.[d]
	Monthly inspections of sealed valves.	1. Records that monthly inspections were performed as specified in § 63.1429. 2. Record and report all monthly inspections that show that valves are in the diverting position or that a seal has been broken—PR.[d] 3. Beginning no later than the compliance dates specified in §

		63.1422(h), record and report 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—PR.[d]

[a] Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.
[b] "Continuous records" is defined in § 63.101.
[c] NCS = Notification of Compliance Status described in § 63.1429.
[d] PR = Periodic Reports described in § 63.1429.
[e] The periodic reports shall include the duration of periods when monitoring data are not collected as specified in § 63.1439.
[f] Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

26. Revise the heading of table 7 to subpart PPP of part 63 to read as follows:

Table 7 to Subpart PPP of Part 63—Operating Parameters for Which Monitoring Levels Are Required To Be Established for Process Vent Streams Subject to § 63.1429(d)(1)

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27. Amend table 8 to subpart PPP of part 63 by removing the entry "§ 63.1439(e)(6)(iii)" and adding the entry "§ 63.1439(e)(6)(viii)" in its place to read as follows:

Table 8 to Subpart PPP of Part 63—Routine Reports Required by This Subpart

Reference	Description of report	Due date
* * * * * * *		
§ 63.1439(e)(6)(viii)	Quarterly reports for sources with excursions (upon request of the Administrator)	No later than 60 days after the end of each quarter.
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