

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 82**

[EPA-HQ-OAR-2022-0707; FRL-9603-02-OAR]

RIN 2060-AV65

Protection of Stratospheric Ozone: Updates Related to the Use of Ozone-Depleting Substances as Process Agents**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: This action establishes recordkeeping and reporting requirements for uses of ozone-depleting substances as process agents and updates related definitions. Codified recordkeeping and reporting requirements will provide clear notice of information the U.S. Environmental Protection Agency collects, aggregates, and reports each year on behalf of the United States as a party to the Montreal Protocol on Substances that Deplete the Ozone Layer; effectively monitor these narrow uses in a more routine and consistent manner under the Clean Air Act; and enhance understanding of emissions of substances harmful to the stratospheric ozone layer.

DATES: This final rule is effective on November 12, 2024. The incorporation by reference (IBR) of certain publications listed in the rule is approved by the Director of the Federal Register as of November 12, 2024.

ADDRESSES: The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA-HQ-OAR-2022-0707. All documents in the docket are listed on the <https://www.regulations.gov> website. Although listed in the index, some information may not be publicly available, *e.g.*, confidential information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard-copy form. Publicly available docket materials are available electronically through <https://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: John Feather, Stratospheric Protection Division, Office of Atmospheric Protection (Mail Code 6205A), Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460; telephone number: 202-564-1230; or email address: feather.john@epa.gov. You may also visit EPA's

website at <https://www.epa.gov/ozone-layer-protection> for further information.

SUPPLEMENTARY INFORMATION:

Throughout this document, whenever “we,” “us,” “the Agency,” or “our” is used, we mean the EPA. Acronyms that are used in this rulemaking that may be helpful include:

ASME—American Society of Mechanical Engineers
 CAA—Clean Air Act
 CEMS—continuous emissions monitoring system
 CFC—chlorofluorocarbon
 CFR—Code of Federal Regulations
 CRA—Congressional Review Act
 EPA—U.S. Environmental Protection Agency
 FOIA—Freedom of Information Act
 FTIR—Fourier-transform infrared spectroscopy
 GHGRP—Greenhouse Gas Reporting Program
 HCFC—hydrochlorofluorocarbon
 HFC—hydrofluorocarbon
 IBR—incorporation by reference
 ICR—Information Collection Request
 NAICS—North American Industry Classification System
 NARA—National Archives and Records Administration
 ODP—ozone depletion potential
 ODS—ozone-depleting substances
 PRA—Paperwork Reduction Act
 RFA—Regulatory Flexibility Act
 SISNOSE—Significant Economic Impact on a Substantial Number of Small Entities
 TEAP—Technology and Economic Assessment Panel
 TRI—Toxics Release Inventory
 UMRA—Unfunded Mandates Reform Act

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- H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act (NTTAA) and Incorporation by Reference
- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations and Executive Order 14096: Revitalizing Our Nation's Commitment to Environmental Justice for All
- K. Congressional Review Act (CRA)

I. General Information**A. Does this action apply to me?**

You may be potentially affected by this action if you use ozone-depleting substances¹ (ODS) as process agents. Potentially affected categories, North American Industry Classification System (NAICS) codes, and examples of potentially affected entities include Industrial Gas Manufacturing (NAICS code 325120), Other Basic Inorganic Chemical Manufacturing (NAICS code 325180), and All Other Basic Organic Chemical Manufacturing (NAICS code 325199).

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in this section could also be affected. If you have any questions regarding the applicability of this action to a particular entity,² consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

B. What action is the Agency taking?

This action is narrow in scope and primarily codifies reporting and recordkeeping requirements for a limited number of chemical manufacturing facilities. EPA annually

¹ For the purposes of this preamble, EPA uses “ozone-depleting substance” and “controlled substance” interchangeably. Both terms are intended to have the same meaning as “controlled substance” as defined in 40 CFR 82.3.

² In certain instances EPA may use the terms “entity,” “person,” and “company” interchangeably. Because EPA anticipates that the parties that use process agents are companies or other entities, the Agency uses these terms to refer to regulated parties in the rule. Using this shorthand, however, does not alter the applicability of the Clean Air Act (CAA)'s or regulation's requirements and prohibitions. Similarly, in certain instances EPA may use these terms interchangeably in this rule preamble, but such differences in terminology should not be viewed to carry a material distinction in how EPA interprets or is planning to apply the requirements discussed herein.

collects process agent consumption and emissions information. In this action, the Agency is codifying reporting requirements to collect this information, including a methodology to calculate emissions. EPA is also defining the term “process agent,” revising definitions of “plant” and “facility” to better reflect current practice, and establishing definitions associated with the emission reporting requirements.

C. What is EPA’s authority for this action?

Several sections of the CAA provide authority for this action. In particular, section 603 provides authority to establish monitoring and reporting requirements for controlled substances. EPA also relies on its authority under section 114 of the CAA, which authorizes the EPA Administrator to establish recordkeeping and reporting requirements in carrying out any provision of the CAA (with certain exceptions that do not apply here). Sections 604 and 605 of the CAA provide the authority to phase out the production and consumption of class I and class II controlled substances, to restrict the use of class I and class II controlled substances, and to promulgate regulations associated with the production of class I and class II controlled substances. EPA’s regulations implementing the production and consumption controls for class I and class II controlled substances, including provisions implementing exceptions to those controls, can be found at 40 CFR part 82, subpart A. Additional authority for electronic reporting, as required under provisions in 40 CFR 82.13(c) and 82.24(a)(1) comes from the Government Paperwork Elimination Act (44 U.S.C. 3504), which provides “(1) for the option of the electronic maintenance, submission, or disclosure of information, when practicable as a substitute for paper; and (2) for the use and acceptance of electronic signatures, when practicable.”

II. Background

A. EPA’s Phaseout of ODS

In 1987, the United States joined 23 other countries and the European Union to sign the *Montreal Protocol on Substances that Deplete the Ozone Layer* (Montreal Protocol) and the United States ratified the Montreal Protocol on April 21, 1988. This international treaty protects and restores the stratospheric ozone layer by phasing out the production and consumption of certain ODS including chlorofluorocarbons (CFCs), halons, methyl bromide, and

hydrochlorofluorocarbons (HCFCs). The Montreal Protocol and its parent treaty, the *Vienna Convention for the Protection of the Ozone Layer*, are the first international treaties to achieve the distinction of having been joined by all countries of the United Nations. The Clean Air Act Amendments of 1990 added title VI on Stratospheric Ozone Protection. Under the CAA and EPA’s regulations at 40 CFR part 82, controls are in place that restrict the production and consumption of ODS to implement the phaseout of these substances. Title VI establishes two classes of controlled ODS: class I and class II controlled substances. Class I controlled substances, *i.e.*, CFCs, halons, carbon tetrachloride, methyl chloroform, methyl bromide, and hydrobromofluorocarbons, have higher ozone depletion potentials (ODPs) and were phased out ahead of class II controlled substances. Class II controlled substances consist only of HCFCs—which have lower ODPs than class I controlled substances—and in many cases acted as transitional substitutes for many class I controlled substances. While existing regulations allow for limited production and consumption of two HCFCs (HCFC–123 and HCFC–124) until 2030, all others have been phased out in the United States. For both class I and class II controlled substances, there are limited exceptions, such as the exclusion from the definition of “production” in 40 CFR 84.3 for controlled substances that are either manufactured and subsequently transformed, *i.e.*, for feedstock uses,³ or destroyed by approved destruction technologies.⁴

B. ODS Used as Process Agents

Process agents are generally understood to be used to create an environment for another process to occur, without themselves being transformed or destroyed during that process. The process agent is not consumed in the reaction, though trace quantities of the process agent may remain in the final product. Certain quantities may also be emitted. For the purposes of this rulemaking, EPA uses the terms “controlled substance used as a process agent”, “ODS process agent”, and “process agent” interchangeably. The Agency also uses the term “consumed” in this context to mean “used up” or transformed.

After initial use, process agents may be reused (with or without recycling),

³ EPA considers terms related to “transformation” and “feedstock uses” to be interchangeable for the purposes of this preamble.

⁴ Approved destruction technologies are listed at 40 CFR 82.3 “Destruction.”

used in transformation reactions, or destroyed. While process agents are generally reused, additional process agents may need to be introduced to replenish losses due to transformation, destruction, emission, or being present in trace quantities in the chemical substance being manufactured. Emissions can be reduced through limiting process agent losses (*e.g.*, mitigate fugitive emissions or capture process agents for further use or destruction) and by directly abating process agent emissions. Technology resulting in zero-emission uses of process agents have increasingly been adopted over time.⁵

C. EPA’s Treatment of ODS Process Agents

Some legacy uses of ODS as process agents continue, in particular where substitutes or alternative processes may not be currently viable, and the Agency annually requests, collects, and reviews information on these uses. This is in line with decisions under the Montreal Protocol to allow the continued use of ODS as process agents under specified situations. The parties to the Montreal Protocol agreed in decision X/14 to except quantities of ODS produced or imported for use as process agents from the general requirements to phase out production and consumption of controlled ODS.⁶ EPA annually prepares information derived from submissions to the Agency on process agent uses in the United States and submits this information to the Montreal Protocol’s Ozone Secretariat on behalf of the United States, consistent with decisions taken by the parties to the Montreal Protocol. On October 19, 2023, EPA proposed to establish recordkeeping and reporting requirements for uses of ODS as process agents and to update definitions to reflect current practice (88 FR 72027). These codified requirements were proposed to monitor process agent uses in a more routine and consistent manner under the Clean Air Act; and enhance understanding of emissions of substances harmful to the stratospheric ozone layer.

III. Reporting and Recordkeeping Requirements

EPA is establishing one-time, annual, and situational reporting for entities that use ODS as process agents, a

⁵ United Nations Environment Programme, Medical and Chemicals Technical Options Committee, 2022 Assessment Report. <https://ozone.unep.org/system/files/documents/MCTOC-Assessment-Report-2022.pdf>.

⁶ <https://ozone.unep.org/treaties/montreal-protocol/meetings/tenth-meeting-parties/decisions/decision-x14-process-agents>.

methodology to estimate emissions, and associated recordkeeping requirements. These requirements will improve the Agency's understanding of process agent uses, efforts to monitor changes that occur over time, and anticipate future changes. Codified recordkeeping and reporting requirements will provide clear and consistent notice of the information EPA will collect each year in order to report consistent with decisions taken by the parties to the Montreal Protocol. These requirements will also further clarify how companies treat and report ODS process agent uses. The Agency is establishing these reporting and recordkeeping requirements for both class I and class II controlled substances that may be used as process agents. These requirements apply to all controlled substances used as process agents, regardless of whether the process agent uses are listed in decisions under the Montreal Protocol.⁷ These reports must be submitted electronically through the Central Data Exchange or another format specified by EPA.

EPA understands that uses in the United States of ODS as process agents are primarily in legacy processes at existing facilities. Based on the information reported and reviewed by the Ozone Secretariat, as well as the discussions held at Montreal Protocol meetings, the United States is one of a few countries that continue to use controlled substances as process agents. The additional recordkeeping and reporting requirements established in this action will support EPA's efforts to assess use of controlled substances as process agents, prepare and report associated information supporting continued need for excepted uses where appropriate, and ensure there is clarity and consistency in reporting on emissions of ODS used as process agents.

This reporting will allow EPA to effectively monitor these narrow process agent uses in a more routine and consistent manner under CAA section 603, and ensure the Agency is accurately documenting production and consumption of class I and class II controlled substances consistent with the limits established under CAA sections 604 and 605.

A. One-Time Report

To establish a baseline set of information from which EPA can monitor potential changes over time,

⁷ EPA encourages entities to contact the Agency for an applicability determination if it is unclear whether a given use of a controlled substance meets EPA's criteria of a process agent use.

EPA is generally finalizing as proposed the one-time reporting requirements, with the additional reported data element of the percentage of process agent consumed in the process agent application. The Agency proposed that any facility that uses a controlled substance as a process agent must submit a one-time report. This report must be submitted within 120 days of October 10, 2024, or within 120 days of the date that a facility first uses a controlled substance as a process agent, whichever is later, and is required regardless of whether an entity has provided this information to EPA previously.

EPA proposed that this one-time report include information concerning the controlled substance being used as a process agent; a mass balance describing where, how, and how much of the controlled substance is used and emitted; if relevant, where, how, and how much of the controlled substance is transformed, destroyed, or otherwise captured; data on how much controlled substance was used in the last year and what it was used to produce (e.g., another chemical or product); air emissions from stack point sources, fugitive sources, and total air emissions; actions taken or under evaluation to phase out use of ODS as a process agent (e.g., by transitioning to a non-ozone depleting alternative); actions taken or under evaluation to minimize process agent use or emissions; and the location of the facility using the process agent.

One commenter requested that EPA remove from the reporting requirements the data elements relating to the percentages of class I controlled substances used as a process agent and retained within the process agent application, recovered after the process agent application, and emitted or entrained in the final product. The commenter stated that this baseline information on process agent use is unnecessary because the information would already be provided in the use, volume, and emission data in the annual reports. The commenter further stated that it produces controlled substances for other uses in addition to use as a process agent, and that reporting this baseline information would require a facility to include information associated with all controlled substance production. The commenter stated that process agent use could be a small percentage of overall production, market conditions that drive overall production do not provide a reliable baseline, and reporting on overall production could compromise confidential information associated with manufacturing processes. Alternatively,

the commenter requested that EPA consider this reporting to be confidential and that process knowledge be allowed to serve as the basis for the information requested.

In response, EPA does not agree that reporting elements concerning the percentages of process agent used are unnecessary and would disclose confidential information. Details of the percentages of process agents used will provide EPA information on how other reported information relate to typical chemical manufacturing pathways and may be relevant to future Agency considerations. It is not evident how EPA may identify these values from the aggregated quantities of use, volume, and emission data that entities will report. Considering the variety of internal processes, process cycles, and potential pathways, it is not feasible for EPA to reliably derive the information the Agency is seeking from the data otherwise provided in annual reports. EPA is also not requiring that facilities include in their annual reporting the amounts retained within the process or entrained in the product. The Agency is requiring that this information be included in the one-time reporting to ensure that this process information may be understood within the context of other reported data. Furthermore, these data elements provide useful information that will help address a recommendation from another commenter, discussed in section V of this preamble, concerning what quantities typically remain in a final product. As also discussed in section V of this preamble, EPA is further adding a requirement that the percentage of process agent consumed in the process agent application be included in this one-time report. Information on these data elements from the one-time reports will be relevant to Agency considerations of what may be appropriate thresholds for determining if a use meets the definition of "process agent" codified in this action at 40 CFR 82.3. EPA further understands that the commenter misunderstood this information as being intended to apply across overall production of the given controlled substances instead of the proportion used as process agents. The relevant data elements were, of the amount of controlled substance used as a process agent, what percentages were respectively retained, recovered, emitted, or entrained. These representative percentages of process agent use through a cycle of the process agent application are not relevant to the commenter's concerns that reporting on the overall production may not provide

a reliable baseline for this one-time report. EPA clarifies that the reported information is intended to represent a typical cycle through a process agent application and entities may, to the best of their ability, apply process knowledge to obtain this information. EPA addresses comments concerning the confidentiality determinations in section IV.B of this preamble.

B. Annual Report

As part of a continuing effort to monitor potential changes over time, EPA is generally finalizing as proposed the requirement that any facility that uses a controlled substance as a process agent must submit an annual report each year by February 14, with the addition of a process for entities to request extensions of reporting due dates. If there are facilities that employ more than one process agent use, any such facilities will need to report data individually for each process that uses an ODS process agent. This information will help enable the Agency to develop annual reports regarding uses of process agents in the United States and to effectively monitor production and consumption of ODS used for process agents consistent with domestic requirements.

EPA proposed to require that each entity with a facility that uses a controlled substance as a process agent must submit for each applicable facility an annual report by February 14 of each year concerning process agent uses for the previous calendar year (*i.e.*, January 1 through December 31). This date coincides with the fourth quarter and certain annual deadlines for related existing ODS reporting requirements, including all quarterly importer and producer reports and the annual reports under 40 CFR 82.13(m) for second party transformation and destruction of class I controlled substances. EPA proposed that these annual reports include information concerning process agent sourcing; amounts recycled, reused, transformed, and destroyed over the previous calendar year; air emissions from stack point sources, fugitive sources, and total air emissions; and a description of emission reduction actions currently in use, planned, or currently under evaluation since the last one-time or annual report.

One commenter supported the proposed reporting on process agent sourcing and on actions taken or under evaluation to phase out use of ODS as a process agent, stating that this information will allow EPA to assess the progress of developing alternatives and possibly end the need for the U.S. exemption for ODS process agents. EPA

acknowledges the commenter's support for the proposed reporting requirements. The Agency notes that this action is limited to establishing reporting requirements, so the commenter's asserted support for actions to phase out use of ODS as process agents are beyond the scope of this action.

Another commenter requested that EPA revise the annual reporting timeline to provide consistency with prior practice, allow time for necessary information to become available, and avoid conflicting with other EPA deadlines. Specifically, the commenter requested that EPA revise the date by which annual reports must be submitted each year, from February 14 to July 31, or April 30 at the earliest. The commenter stated that previous requests for information from EPA on these process agent uses have been received in July and responses were due within 20 working days and that the proposal did not indicate a need or reason to vary this timeline. The commenter stated that information EPA proposed to require in the annual reports would not be available by February 14 and that this accelerated timeline would place an undue burden on the commenter. The commenter stated that manufacturing facilities that will be subject to the requirements being established in this rule will not have finalized emission calculations for the prior calendar year by February 14, and provided as examples that reporting under the Toxics Release Inventory (TRI) program is not due until July 1 and emission inventory reporting obligations for the commenter's facilities under State programs ranged from April 1 to April 30. The commenter stated that aligning the timing with other existing and established requirements would reduce burden associated with the proposed reporting obligations. The commenter cited identical rationales for asserting that data elements are confidential as it had for the proposed one-time reporting requirements.

EPA disagrees with the commenter's assertions that a February 14 deadline for annual reporting would be infeasible, unduly burdensome, or unjustified. The commenter did not explain why the information required to be included in the annual report would not be available by February 14. The commenter provided examples of later deadlines under different programs, but did not provide a reason that it would be infeasible for facilities to submit the required information for this program by February 14 of each year. Emissions of controlled substances from process agent uses are one component of overall emission inventories for subject

facilities and EPA is unaware of any impact the requirements being finalized in this action may have on these facilities under other programs. As EPA stated at proposal, February 14 aligns with the fourth quarter and annual deadlines for existing ODS reporting requirements under 40 CFR part 82. February 14 also aligns with existing deadlines for regulated substances, including reporting requirements under 40 CFR part 84 for hydrofluorocarbon (HFC) production (which includes emissions), HFC-23 emissions, and HFC process agent emissions. The commenter noted that it was subject to existing reporting deadlines that ranged from April 1 to July 1, and it is unclear why the commenter requested the requirements being finalized in this action should be no later than July 31, or, at the earliest, April 30. Furthermore, in line with U.S. commitments through the Montreal Protocol, the earlier reporting deadline being finalized supports EPA efforts to thoroughly review submitted information for completeness, accuracy, and consistency prior to a timely submission of this information to the Montreal Protocol's Ozone Secretariat on behalf of the United States. However, EPA is finalizing that the Agency may grant a short extension in the unlikely event that an entity cannot comply with this reporting timeline. Entities may submit a request for an extension with supporting documentation and explanation of the reasons needed for an extension. The Agency will consider the circumstances of any such requests and act accordingly. EPA addresses comments concerning the confidentiality determinations in section IV.B of this preamble.

C. Advance Notice of Changes Report

EPA is largely finalizing as proposed a requirement that entities provide advance notice of changes, with revisions to the conditions under which reporting would be necessary. This advance notice of changes is required at least 180 days before an entity expects to increase, as compared to the previous year and the average of the three previous years, the amount of process agent introduced into the application by more than 20 percent or emissions by at least one metric ton and 20 percent. EPA understands that facility operations change over time, and the Agency can monitor such changes through the annual reporting mechanism. However, large changes in facility operations over a short period of time can impact the environment, conformance with domestic regulatory requirements, and our commitment to international

agreements. Annual reports represent a delayed view into past actions and may not provide sufficient lead time for an appropriate response. This notification requirement will provide EPA the opportunity to assess potential implications in advance of a change at the facility.

EPA proposed to require that each facility with a significant process change, including an increase in the quantity of the final output manufactured using an ODS process agent, submit a report specifying changes at least 180 days prior to implementing the change. EPA proposed that this prior notification requirement apply to any process changes anticipated to result in increases by the next annual report of greater than 20 percent of the amount of controlled substance initially introduced for or emitted during use as a process agent by a facility, as compared to the corresponding data in the previous calendar year.

One commenter supported EPA's proposal to require reporting to specify changes at least 180 days before implementing a significant process change, including any increase in the quantity of manufacturing output using an ODS process agent. EPA acknowledges the commenter's support.

Another commenter requested that EPA not require the significant change report or, alternatively, that the reporting requirement exclude changes due to production variability and unexpected circumstances. The commenter offered examples of potential changes that may be difficult to predict with at least 180-day notice or where further revisions may occur after a notification is submitted, including plant outage(s), natural disasters, and market conditions. The commenter further stated that uses of process agents can be quite small and that a 20 percent change could be difficult to predict. The commenter suggested that, particularly for facilities that emit greater than one ton, EPA could require reporting of these changes in the annual report through which process agent use and emissions would already be reported.

EPA acknowledges the commenter's concerns about situations where the proposed requirements may be difficult to implement, but disagrees with the commenter's suggestion that the Agency not finalize the requirement to report significant changes in advance. It is unclear how the examples the commenter provided, namely plant outage(s), downtime due to natural disasters, other pauses in production, and drops in demand and production

due to the covid epidemic, would result in unanticipated large increases in process agent use or emissions. These are cases where process agent use and emissions may decrease by large quantities, but these decreases would not necessitate an advance notice of changes. Subsequent increases in use or emissions in a year following such unexpected cases might necessitate reporting, but after such incidents it would be reasonable to anticipate a return to previous production levels.

EPA could also imagine that unexpected changes at one of a company's facilities might result in increased utilization of one or more of its other facilities. Shifting production between facilities to account for such cases might result in an individual facility increasing its process use or emissions by large amounts, but not result in an overall increase across the company or the United States. This scenario would be unlikely to result in large impacts on total use and emissions, conformance with domestic regulatory requirements, or U.S. commitments under the Montreal Protocol. Therefore, EPA is revising the advance notice of changes reporting requirement so that it applies to each entity rather than to an individual facility. Additionally, the Agency is revising the basis of the percentage change to apply only if the increase is greater than a 20 percent increase relative to values from both the immediately previous year and the average of the past three years. This accounts for situations where production may drop in a single year and then return to typical levels in the following year, which would result in an apparent year-on-year increase. In this case it would be reasonable to expect that production may return to previous levels after a disruption. This also addresses cases where production may moderately increase annually, which would result in a relatively large increase over several years. EPA would receive relevant information each year and there would not be a large increase in any given year. In both cases advance notice would not be necessary for EPA to understand the potential for large increases and impacts by the submission of the next annual report. Furthermore, the Agency would have had opportunities to assess the circumstances and request additional information as relevant. Advance notice reporting will only be required for anticipated changes that represent a large overall increase for the entity, as calculated across all the entity's applicable facilities. EPA expects that

this mitigates the commenter's concern about production variability at the facility level or other unanticipated changes raised by the commenter. At the same time, the reports will provide EPA the information it needs to monitor uses and emissions of process agents. The Agency also recognizes that there may be instances where it is not feasible to provide EPA with the requisite 180 days of notice, but the possibility of those instances is not, in the Agency's view, a reason not to require the notice period. If that situation were to occur, EPA encourages the entity to contact the Agency as soon as practicable so that EPA can work with the entity.

EPA acknowledges the commenter's statement that a 20 percent change from a facility with relatively small emissions may be difficult to assess, but the Agency disagrees with the commenter's alternative recommendation that these changes instead be included in the annual report. Smaller changes at that level would pose lesser contributions to overall emissions in the United States, and advance notice would be less necessary. The annual report is submitted by February 14 of the year following actions taken, and is inherently retrospective. Only including this information in the annual report would defeat the purpose of providing advance notice. However, EPA recognizes that changes in emissions from process agents from facilities that have, on the whole, relatively small emissions, pose lesser contributions to overall emissions in the United States, and advance notice of these changes is therefore less critical.

Accordingly, EPA is revising the qualifying criteria to require that this advance notice be provided only where changes that would result in annual increases greater than 20 percent of the amount initially introduced or, for emissions, increases of at least 20 percent and one metric ton. This will ensure the Agency has advance notice of changes that may have a large impact on overall use or emissions of process agents in the United States, while exempting from the advance notice requirements changes from smaller contributors. EPA addresses comments concerning the confidentiality determinations in section IV.B of this preamble.

D. Emissions Reporting Methodology and Incorporation by Reference

In alignment with the one-time and annual reporting requirements being finalized in this action, EPA is establishing requirements that entities using controlled substances as process agents report emissions as specified in

40 CFR 84.25. These requirements are being finalized largely as proposed, with the addition of a mass balance compliance option and a revision of the retesting frequency to be at least every five years rather than every 10 years. The units of measure for determining emissions and the method to calculate emissions will be in kilograms of controlled substance emitted. Emission reporting requirements align as appropriate with timelines for one-time and annual reporting requirements being established in this action.

These requirements prescribe emission estimation methodologies through vent-specific and mass balance compliance options. Associated reporting and recordkeeping requirements will support EPA's efforts to validate the reported information. For example, for facilities using an emission factor-based method, each process vent in the top quartile of its respective facility's emissions generally must use the process-vent-specific emission factor method, which requires emission tests with process activity parameters measured for either each operating scenario or the operating scenario with the largest overall emissions. All emissions test data and procedures used in developing emission factors must be documented. Process vents with less emissions may use the process-vent-specific emission calculation factor method, which prescribes certain procedures to calculate emissions for each operating scenario, but does not require testing. All data, assumptions, and procedures used in the calculations or engineering assessment must be documented. Each process using the mass balance method must demonstrate adherence to accuracy and precision requirements. In these cases, the reported information follow specified methodologies and EPA may request and assess detailed records to better understand the reported data. EPA is also listing and incorporating by reference certain American Society of Mechanical Engineers (ASME), ASTM International (ASTM), and EPA standards as acceptable options to calculate, measure, analyze, or measure parameters associated with emissions. Due to similarities in requirements, emitted chemicals, and regulated industries, these standards are the same standards listed in 40 CFR part 98, subpart L, and the same versions incorporated by reference in 40 CFR 98.7, except for ASTM D6348-03,⁸

⁸ The citation for the version of ASTM D6348-03 incorporated by reference in this action is different from the citation listed in 40 CFR 98.7 but the

incorporated by reference in 40 CFR 60.17, and ASME MFC-4M-1986 (Reaffirmed 2016).⁹

EPA proposed to require that entities using controlled substances as process agents report emissions using a methodology similar to the emissions reporting requirements for the Greenhouse Gas Reporting Program (GHGRP) codified at 40 CFR part 98, subpart L (40 CFR 98.120 through 98.128). EPA also sought comment on a description of procedures to implement the proposed emission reporting requirements (available in a memorandum to the docket for this action at Docket ID No. EPA-HQ-OAR-2022-0707-0002).

Specifically, EPA proposed that acceptable testing methods for measuring process vent emissions of controlled substances would include EPA Method 18 in appendix A-1 to 40 CFR part 60, EPA Method 320 in appendix A to 40 CFR part 63, EPA 430-R-10-003, ASTM D6348-03, or other analytical methods validated using EPA Method 301 in appendix A to 40 CFR part 63. EPA Method 301 provides a process to validate and approve other analytical methods as appropriate. In the memorandum to the docket, EPA included as compliance options these and other methods listed for existing requirements in 40 CFR part 98, subpart L, and incorporated by reference in 40 CFR 98.7.¹⁰

In the proposal, EPA discussed advantages and disadvantages of potential approaches, requested comment on these assessments, and highlighted particular areas of consideration. The Agency noted the approach used by the TRI program at 40 CFR part 372, and explained its concerns with applying the general TRI reporting requirements to this limited set of ODS process agent pollutants, industry sectors, and types of operations for the purposes of this action.

Two commenters expressed their support for an emissions reporting approach similar to the GHGRP instead of TRI reporting requirements. There were no responses to EPA's request for

standard is the same standard listed in 40 CFR part 98, subpart L.

⁹ The version of ASME MFC-4M-1986 (Reaffirmed 2016) incorporated by reference in this action is different from the version listed in 40 CFR 98.7 but the standard is the same standard listed in 40 CFR part 98, subpart L.

¹⁰ As discussed in footnotes 8 and 9, in this action EPA is incorporating by reference different versions of standards than were listed in the memorandum. The Agency is also not incorporating by reference the ASTM D-2879 standard that was listed in the memorandum because it is unnecessary for the note's guidance to incorporate that standard by reference.

comment on whether adjustments from the proposed methodology were necessary to account for distinctions between controlled substance emissions, process agent applications, or industry sectors. The Agency understands that the emission reporting methodology established in this rule is applicable to these process agent applications and their associated industry sectors.

The Agency requested comment on whether there are potential gaps in the proposed approaches to determining emissions from process agent applications and whether alternative approaches, such as a mass balance method as described in appendix A to 40 CFR part 98, subpart L, may be suitable in those particular cases. EPA also requested comment on the advantages and disadvantages of specifying one testing method instead of several options (e.g., EPA Method 18 as the analytical method and EPA Method 21 monitoring procedures for leak detection). EPA sought comment on whether finalizing the use of one method, instead of multiple methods, would improve the consistency of emission data reported across the facilities using ODS as process agents.

Two commenters supported EPA's proposal to use a methodology similar to the emissions reporting requirements at 40 CFR part 98, subpart L. These commenters stated that it would be reasonable to allow only one testing method for this small set of affected entities instead of several options and that this would ensure more consistency when evaluating emissions. One of these commenters recommended that EPA finalize the rule as proposed. The commenter stated that the GHGRP approach is more reasonable than the TRI approach because it would require entities to use a specific methodology and report more detailed information, which would result in data that are more consistent and manageable for EPA to validate. The commenter further stated that the approach EPA proposed is more likely to produce more reliable emission data than the mass balance approach the Agency took comment on. The other commenter stated that more frequent and involved testing was necessary to ensure accurate accounting of emissions. Further, the commenter referenced a report that it had previously issued and stated that the report had demonstrated that the GHGRP reporting requirements, which rely on emission factor estimates and/or limited and infrequent testing to support calculation methods, may be insufficient to accurately estimate and account for the controlled substances

being emitted. Specifically, the commenter pointed to the report's assertion that its investigators detected controlled substances that the facilities did not report under existing GHGRP requirements. The commenter recommended incorporating some form of mandatory continuous emissions monitoring systems (CEMS) technology for the top emission sources of ODS process agents to gauge the accuracy of emission factor-based calculations and to identify emissions that may not have otherwise been detected. The commenter cited examples of technologies to continuously monitor emissions from process vents and leaks, including a portable Fourier-transform infrared spectroscopy (FTIR) gas analyzer and continuous infrared monitoring. The commenter stated that the frequency of retesting should be increased from every 10 years as proposed to every year to more quickly identify potential discrepancies between reported and actual emissions. The commenter stated that it is reasonable to expect monitoring and testing on all processes, given the restrictions on these ODS due to their outsized damage to the atmosphere. The commenter asked for clarification if TRI emission data would continue to be submitted in addition to these newly established requirements for ODS process agents. The commenter stated its belief in the value of a central data-sharing repository to view all fluorinated gas emission data and account for potential overlaps between reporting requirements. The commenter further stated that previous years' data on process agent raw volumes of emissions specific to each use and substance by facility reported to the Montreal Protocol should be available. The commenter suggested that the decline in the number of ODS process agent uses and emissions over the years indicates that these uses are not essential and will cease in the future with the rise of alternatives. The commenter urged EPA to use information gathered to advance the understanding of alternatives to ongoing ODS process agent uses, and available options to further limit emissions from those sources still requiring their use.

EPA acknowledges the commenters' support for the proposed methodology and one commenter's support for the proposal as a whole. The Agency acknowledges the commenters' general support for specifying one testing method instead of allowing any of the several methods that were proposed. No commenters indicated potential disadvantages with specifying EPA

Method 18 as the analytical method and EPA Method 21 monitoring procedures for leak detection. However, EPA remains unaware of whether these methods may be applicable in all situations for these operations and process agent emissions. At this time, EPA will allow entities to use any of the several methods being finalized in this action, as applicable. EPA will further assess available information and may consider in a future rulemaking whether it would be practicable and advisable to specify a more limited set of testing methods and monitoring procedures. To align with existing EPA emission reporting requirements for similar chemicals and processes, the Agency is incorporating by reference in 40 CFR part 82, subpart A, the same versions of the relevant methods listed at 40 CFR part 98, subpart L.

With respect to the commenter's request to require CEMS or some other form of continuous monitoring in order to verify the emission factor-based calculations underlying the proposed reporting requirements, EPA does not agree that these additional monitoring requirements and associated compliance burden are warranted for these circumstances. The Agency disagrees with the commenter's characterization of the report's findings as undermining the emission factor-based method or structure of the GHGRP reporting requirements in general as applied in this context for estimating emissions of controlled substances used as process agents. EPA's understanding is that the facility where the commenter detected CFCs does not use controlled substances as process agents and would not be subject to the requirements being established in this action. The commenter did not justify why the emissions it detected from that facility would indicate that the proposed methodology would be insufficient for the process agent uses addressed in this action. The fact that controlled substances were detected from the specific facility but not reported through the GHGRP does not indicate any inadequacies of the emission calculation, monitoring, or reporting requirements being established for process agent uses in this action. EPA explicitly excepted ODS controlled substances from the definition of "fluorinated greenhouse gas" under 40 CFR 98.6, and accordingly from the GHGRP emission reporting requirements under 40 CFR 98.122, because EPA already regulated controlled substances under 40 CFR part 82.¹¹ This exclusion of controlled

substances from the GHGRP reporting requirements was not due to any technical limitations of the requirements under 40 CFR part 98. EPA also understands that these facilities may produce or transform controlled substances, and other facilities within the vicinity may contribute to emissions of controlled substances as well, so it is unclear how effectively the detected emissions and recommended monitoring techniques may be attributable to any particular process. The emissions reporting requirements in this rule are specifically focused on obtaining accurate and consistent information on process agent uses. Because these process agent uses typically involve legacy operations, EPA does not anticipate that operations will change frequently enough in kind or scale to necessitate intensive monitoring or annual testing of process vents to revise emission factors. EPA is finalizing as proposed a requirement that entities conduct an emissions test of process vents to update emission factors if changes to operating scenarios result in increases of 15 percent or more. It is the Agency's view that this is adequate to ensure that emissions factors are accurate and reasonably reflect current conditions. Furthermore, while the Agency does not agree that annual retesting should be required, because, as noted, most of the process agent uses involve legacy operations where EPA does not anticipate much variability in operations, the Agency recognizes that retesting at a greater frequency than every 10 years would provide more assurance of the validity of these factors. Accordingly, in this final rule, EPA is requiring process vent testing, as applicable, no less often than every five years.

Another commenter stated that there are instances where a mass balance approach may be more accurate to estimate fugitive emissions than the proposed approach. The commenter provided information about its operations at one facility as an example, and requested EPA include a mass balance approach as an acceptable method for calculating fugitive ODS emissions. The commenter stated that, while the proposed emission factor-based methods have historically been used to quantify equipment leak emissions from various industrial processes, these approaches include factors that are based on general industry-wide data and do not necessarily reflect individual facility, site-specific process and equipment characteristics. The commenter explained that ODS enter into the

¹¹ 74 FR 16579.

process at its facility from a single source, the facility does not produce or transform the ODS, stack emissions are monitored with an EPA-certified CEMS, and the ODS content of all generated waste stream quantities are monitored and documented. For these circumstances, the commenter stated that the fugitive emissions would be underestimated using an emissions factor method and are more accurately calculated using a mass balance approach than Method 21 and screening level emission factors.

EPA understands that the proposed emission methodology requirements would be applicable to the commenter's operations and does not agree that these requirements lack adaptability to site-specific circumstances. The requirements being established in this action include a process to create site-specific process-vent-specific emission calculation factors and site-specific leak monitoring approaches. However, EPA acknowledges that a mass balance approach may also be an appropriate option for the situation described, which EPA understands to involve batch operations with no on-site production or transformation. Accordingly, EPA is adding a mass balance approach as a compliance option for batch operations with no on-site production or transformation of controlled substances, based on the GHGRP provisions listed in appendix A to subpart L of 40 CFR part 98. The GHGRP requirements were designed for situations where fluorine enters a process as part of a reactant and leaves as part of a product or byproduct. Controlled substances are not produced or transformed in these process agent applications. Accordingly, the mass balance approach established in this action for controlled substances used as process agents addresses the quantities of controlled substances entering and leaving the process agent application. Any entity that uses this compliance option must demonstrate that it can meet the error limits or measurement and operating criteria specified in the requirements. Each facility should use the methodology that most accurately estimates emissions from its processes.

More information on the standards being incorporated by reference in 40 CFR 82.27 is available in section VII.I of this preamble. Available ASME methods are ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi; ASME MFC-4M-1986 (Reaffirmed 2016), Measurement of Gas Flow by Turbine Meters; ASME MFC-5M-1985 (Reaffirmed 1994), Measurement of Liquid Flow in Closed Conduits Using

Transit-Time Ultrasonic Flowmeters; ASME MFC-6M-1998, Measurement of Fluid Flow in Pipes Using Vortex Flowmeters; ASME MFC-7M-1987 (Reaffirmed 1992), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles; ASME MFC-9M-1988 (Reaffirmed 2001), Measurement of Liquid Flow in Closed Conduits by Weighing Method; ASME MFC-11M-2006), Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters; and ASME MFC-14M-2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters.

The ASTM method is ASTM D6348-03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy. ASTM D2879-97 (Reapproved 2007), Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isotenoscope may also be used to determine vapor pressures for purposes of the definition "in light liquid service." ASTM D2879-97 is available for inspection at U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW, Washington, DC 202-566-1742 and may be obtained at ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428; phone: 610.832.9500; email: service@astm.org; website: www.astm.org/.

EPA methods are Approved Alternative Method 012: An Alternate Procedure for Stack Gas Volumetric Flow Rate Determination; Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, Emissions Inventory Improvement Program, Volume II: Chapter 16, August 2007; EPA-453/R-95-017, November 1995; EPA-430-R-10-003, March 2010, Protocol for Equipment Leak Emission Estimates; and Other Test Method 24, September 2006, Tracer Gas Protocol for the Determination of Volumetric Flow Rate Through the Ring Pipe of the Xact Multi-Metals Monitoring System.

E. Recordkeeping

Entities are obligated under existing requirements to record information in accordance with 40 CFR 82.13 and 82.24, including information concerning ODS used as process agents. In this action EPA is finalizing as proposed recordkeeping requirements specifically for uses of ODS as process agents. Under 40 CFR 82.13(d), entities must retain the records and copies of reports required for at least three years. Under previously established requirements in 40 CFR 82.13 and 82.24, entities, including

producers and importers, must record information that applies to controlled substances in general, including those used as process agents. In this action EPA is establishing specific requirements that differentiate controlled substances intended for process agent use from the wider uses. This additional information will provide further distinctions of information already required to be recorded.

EPA proposed to also require that entities using process agents record information that documents what would be reported to the Agency, which includes information concerning sourcing, production, recycling, reuse, transformation, and destruction for ODS intended to be used for process agent applications.

Specifically, the Agency proposed to add requirements that companies that use process agents maintain: dated records of the quantity of each process agent produced at each facility; records identifying the producer or importer of process agents received; copies of invoices or receipts documenting the sale or other transfer of ownership of process agents; dated records identifying the quantity of each product manufactured within each facility by using process agents; dated records of the quantity of process agent spills or releases greater than or equal to 100 pounds; dated records of information used to calculate emissions; dated records of the quantity of process agents which are subsequently transformed or destroyed; and a copy of the transformation or destruction verification in the case that a process agent is subsequently sold or distributed to another entity for transformation or destruction.

One commenter requested that EPA revise the proposed reference to recordkeeping responsibility in 40 CFR 82.13(ee)(3) from applying to a "person" to instead apply to an "entity," in alignment with EPA's terminology for proposed reporting requirements under 40 CFR 82.13(ee)(1) and (2). The same commenter requested that EPA revise the recordkeeping requirements proposed in 40 CFR 82.13(ee)(3)(i) to reflect the amount of controlled substance used as process agent at each facility instead of the amount of controlled substance produced at each facility, as the commenter also produces the same controlled substance for other uses. The commenter stated that it would be difficult to predict or keep accurate numbers prospectively recording the amount of controlled substance that was produced and may be used as a process agent, and that

dated records of the amount used at each facility as a process agent would be most relevant for the purposes of these requirements.

As EPA states in footnote 2 of this preamble, “person” and “entity” may be used interchangeably in certain circumstances. The instances referenced were not intended to carry a material distinction in interpretation or application. For clarity, EPA is finalizing terminology in 40 CFR 82.13(ee)(3) that refers to the recordkeeping obligations as applying to an “entity.” To be clear, each entity, including all commonly owned companies, is responsible for the regulatory obligations as applicable of all commonly owned facilities and plants subject to the requirements being finalized in this action. EPA acknowledges the commenter’s explanation of its process agent production operations and understands that the same chemical may be used for multiple purposes and, after use as a process agent, may subsequently be transformed or destroyed. The Agency agrees that the amount of process agent used is a relevant recordkeeping element to track the use of controlled substances and is finalizing that additional data element for the recordkeeping requirements. However, under existing requirements in 40 CFR 82.13(f)(2)(ii) and 82.24(b)(1)(i) and (ii), entities must differentiate production records by whether the quantities of controlled substances were intended for use in processes resulting in their transformation or destruction. EPA understands that some quantities of controlled substances are produced solely for use by the same entity as a process agent and ultimately are not transformed or destroyed. The Agency understands that complete information on future use and disposition may not be known at the time of production, but sees value in documentation of the expected use. Therefore, in addition to requiring that entities maintain records of the quantities of each controlled substance initially introduced into the process agent application for use as a process agent, EPA is clarifying records of the quantity that was produced for use as a process agent refers to the expectation at the time of production. This requirement for entities that use process agents is separate from existing requirements for producers in 40 CFR 82.13(f)(2)(ii) and 82.24(b)(1)(i) and (ii) and may not necessarily correspond directly with the quantities actually used as a process agent.

IV. How will EPA treat ODS process agent data collected under this action?

Consistent with EPA’s commitment to transparency in program implementation, as well as to proactively encourage compliance with EPA’s general ODS phaseout and to meet the United States’ reporting commitments under the Montreal Protocol, EPA is finalizing determinations for the treatment and release of data that will be collected.

EPA is finalizing certain categorical emission data and confidentiality determinations for individual reported data elements that EPA will be collecting through this rulemaking. This action identifies certain information categories that must be submitted to the Agency that will be subject to disclosure to the public without further notice because the information has been determined to be either “emission data” under 40 CFR 2.301(a), or EPA has found that the information does not meet the standard for confidential treatment under Exemption 4 of the FOIA. The Agency has also identified certain other categories of information that may be entitled to confidential treatment. The emission data and confidentiality determinations in this action are intended to encourage consistency among reported data, compliance with EPA’s ODS phaseout, and to meet the United States’ reporting commitments under the Montreal Protocol. Establishing these determinations through this rulemaking will provide predictability for both information requesters and submitters. Separately, for information reported on process agents that is not addressed in this rulemaking, *i.e.*, data elements being finalized in this rule for which EPA is not in this action issuing a determination, the Agency will apply the 40 CFR part 2 process for establishing case-by-case confidentiality determinations.

A. Background on Determinations of Whether Information Is Entitled to Treatment as Confidential Information

1. Confidential Treatment of Reported Information

Regulated entities that must submit information to EPA frequently claim that some or all of that information is entitled to confidential treatment and therefore exempt from disclosure under Exemption 4 of the FOIA.¹² Exemption 4 exempts from disclosure “trade secrets and commercial or financial information obtained from a person [that is]

privileged or confidential.”¹³ In order for information to meet the requirements of Exemption 4, EPA must find that the information is either: (1) A trade secret, or (2) commercial or financial information that is: (a) obtained from a person, and (b) privileged or confidential.

Generally, when EPA has information that the Agency intends to disclose publicly that is covered by a claim of confidentiality under FOIA Exemption 4, EPA has a process to make case-by-case or class determinations under 40 CFR part 2 to evaluate whether such information qualifies for confidential treatment under the exemption.^{14 15} In this action, EPA is making categorical emission data and confidentiality determinations in advance through this notice and comment rulemaking for some information that will be submitted to EPA under the requirements established in this action. This information will be subject to disclosure to the public without further notice.

The U.S. Supreme Court decision in *Food Marketing Institute v. Argus Leader Media*, 139 S. Ct. 2356 (2019) (*Argus Leader*) addresses the meaning of “confidential” within the context of FOIA Exemption 4. The Court held that “[a]t least where commercial or financial information is both customarily and actually treated as private by its owner and provided to the government under an assurance of privacy, the information is ‘confidential’ within the meaning of Exemption 4.”¹⁶ The Court identified two conditions “that might be required for information communicated to another to be considered confidential.”¹⁷ Under the first condition, “information communicated to another remains confidential whenever it is customarily kept private, or at least closely held, by the person imparting it.”¹⁸ The second condition provides that “information might be considered confidential only if the party receiving it provides some

¹³ 5 U.S.C. 552(b)(4).

¹⁴ 40 CFR 2.205.

¹⁵ This approach of making categorical determinations for a class of information is a well-established Agency practice. Prior examples of rules where EPA has made such categorical determinations include Confidentiality Determinations for Data Required Under the Mandatory Greenhouse Gas Reporting Rule and Amendments to Special Rules Governing Certain Information Obtained Under the Clean Air Act (76 FR 30817, May 26, 2011); Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards (88 FR 4296, January 24, 2023); and Renewable Fuel Standard (RFS) Program: RFS Annual Rules (87 FR 39600, July 1, 2002).

¹⁶ *Argus Leader*, 139 S. Ct. at 2366.

¹⁷ *Id.* at 2363.

¹⁸ *Id.* (internal citations omitted).

¹² 5 U.S.C. 552(b)(4).

assurance that it will remain secret.”¹⁹ The Court found the first condition necessary for information to be considered confidential within the meaning of Exemption 4, but did not address whether the second condition must also be met.

Following the issuance of the Court’s opinion in *Argus Leader*, the U.S. Department of Justice issued guidance concerning the confidentiality prong of Exemption 4, articulating “the newly defined contours of Exemption 4” post-*Argus Leader*.²⁰ Where the Government provides an express or implied indication to the submitter prior to or at the time the information is submitted to the Government that the Government would publicly disclose the information, then the submitter generally cannot reasonably expect confidentiality of the information upon submission, and the information is not entitled to confidential treatment under Exemption 4.²¹ In this rule, EPA is clearly asserting the Agency’s determination that certain information is not confidential, not entitled to confidential treatment, and may be disclosed publicly. This is aligned with the Supreme Court’s decision and the subsequent Department of Justice guidance that the government’s assurances that a submission will be treated as *not* confidential should dictate the expectations of submitters. Based on the finalized determinations, submitters are on notice before they submit any information that EPA has determined that the identified data elements discussed below, as well as in the addendum provided in the docket for this action titled *Confidentiality Determinations and Emission Data Designations for Data Elements in the ODS Process Agents Reporting Final Rule*, will not be entitled to confidential treatment upon submission and may be released by the Agency without further notice. As a result, submitters will not have a reasonable expectation that the information will be treated as confidential; rather, they have the

reasonable expectation that the information will be disclosed.

As described further below, EPA is making categorical determinations that some of the data elements that will be submitted to EPA are not entitled to confidential treatment because either: it is not the type of information that submitters customarily keep private or closely held; it is already publicly available; or it is discernible information that is self-evident or readily observable through reverse engineering by a third party.

2. Emission Data Under Section 114 of the CAA

The CAA states that “[a]ny records, reports or information obtained under [section 114] shall be available to the public.”²² Thus, the CAA begins with a presumption that the information submitted to EPA will be available to be disclosed to the public. It then provides a narrow exception to that presumption for information that “would divulge methods or processes entitled to protection as trade secrets.” The CAA then narrows this exception further by excluding “emission data” from the category of information eligible for confidential treatment. While the CAA does not define “emission data,” EPA has done so by regulation at 40 CFR 2.301(a)(2)(i). On occasion EPA releases some of the information submitted under CAA section 114, such as emission data, to parties outside of the Agency of its own volition, through responses to requests submitted under the FOIA,²³ or through civil litigation. As noted in the prior section, generally, when EPA has information that the Agency intends to disclose publicly that is covered by a claim of confidentiality under FOIA Exemption 4, EPA has a process to make case-by-case or class determinations under 40 CFR part 2. This process includes an evaluation of whether such information is or is not emission data, and whether it otherwise qualifies for confidential treatment under FOIA Exemption 4.²⁴

The regulations at 40 CFR 2.301 define emission data to include the following:

- Information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of any emission which has been emitted by the source (or of any pollutant resulting from any emission by the source), or any combination of the foregoing;

- Information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of the emissions which, under an applicable standard or limitation, the source was authorized to emit (including, to the extent necessary for such purposes, a description of the manner or rate of operation of the source); and

- A general description of the location and/or nature of the source to the extent necessary to identify the source and to distinguish it from other sources (including, to the extent necessary for such purposes, a description of the device, installation, or operation constituting the source).

In this action, EPA is applying the regulatory definition of “emission data” in 40 CFR 2.301(a)(2)(i) to determine that certain categories of source certification and compliance information are not entitled to confidential treatment because they qualify as emission data. That information is subject to disclosure to the public without further notice. As relevant to this action, a “source” for purposes of the definition in 40 CFR 2.301 is generally the equipment covered by a regulatory requirement, such as process equipment in a plant or facility and any related emission units. EPA’s definition of emission data also excludes certain information related to products still in the research and development phase or products not yet on the market except for limited purposes. Thus, for example, 40 CFR 2.301(a)(2)(ii) excludes information related to “any product, method, device, or installation (or any component thereof) designed and intended to be marketed or used commercially but not yet so marketed or used.” This specific exclusion from the definition of emission data is limited in time. EPA has concluded that no data related to this exclusion are implicated in this rulemaking because data required to be reported under this rule generally relate to equipment that EPA understands are primarily for purposes of maintaining legacy production processes at existing facilities.

B. Data Elements To Be Reported to EPA Under This Action

Consistent with EPA’s commitment to transparency in program implementation, EPA has reviewed the data reporting elements being finalized in this action to see if information under the umbrella of those data elements could be considered entitled to confidential treatment. EPA is finalizing as proposed its determinations to treat

¹⁹ Id. (internal citations omitted).

²⁰ “Exemption 4 After the Supreme Court’s Ruling in *Food Marketing Institute v. Argus Leader Media* and Accompanying Step-by-Step Guide,” Office of Information Policy, U.S. Department of Justice, (October 4, 2019). Available at: <https://www.justice.gov/oip/exemption-4-after-supreme-courts-ruling-food-marketing-institute-v-argus-leader-media>.

²¹ See *id.*; see also “Step-by-Step Guide for Determining if Commercial or Financial Information Obtained from a Person is Confidential under Exemption 4 of the FOIA,” Office of Information Policy, U.S. Department of Justice, (updated October 7, 2019). Available at: <https://www.justice.gov/oip/step-step-guide-determining-if-commercial-or-financial-information-obtained-person-confidential>.

²² CAA section 114(c); 42 U.S.C. 7414(c).

²³ 5 U.S.C. 552.

²⁴ 40 CFR 2.301(a)(2)(i).

certain data elements as not entitled to confidential treatment. Later in this section, EPA outlines individual data elements and the Agency's determinations of whether they will be handled as confidential, not confidential or undetermined. The Agency also lists its determinations of whether the data elements are emission data, which are not confidential, and are therefore releasable. There may be additional reasons not to release individual data elements determined to not be entitled to confidential treatment, for example if it is personally identifiable information. EPA is making confidentiality determinations and treating data concerning process agent uses similarly to the process under the HFC Phasedown Program as codified in 40 CFR 84.31(k). Some data may be released in different contexts, including to the general public to encourage transparency, to ensure compliance with EPA's general ODS phaseout, and to meet the United States' reporting commitments under the Montreal Protocol. Emission data, including data used as inputs to emissions equations, is generally releasable under CAA section 114(c), which provides that emission data shall be available to the public. "Inputs to emission equations" refers to data necessary to determine the identity, amount, frequency, or concentration of the emission emitted by the reporting facilities. Inputs to emission equations include equipment parameters, measured data, supporting calculations, and other rationale used to calculate reported emission quantities. Some aggregated data would also be released to the Ozone Secretariat in line with past practices and existing commitments, which could include a list of the process agent applications and the specific ODS used as process agents in those applications, the levels of emissions from those process agent applications in metric tons and ODP-weighted metric tons, and the specific containment technologies used to minimize emissions of controlled substances. EPA also stated the Agency's intention to release the aggregate consumption of ODS used as process agents in metric tons and ODP-weighted tons. Finally, EPA stated that the Agency would include production, import, export, and destruction of ODS used as process agents by chemical in data reported to the Montreal Protocol's Ozone Secretariat as part of the United States' annual report submitted under Article 7 of the treaty. At this time, this aggregated data would generally comprise data from three or more entities. Release of this information

documents U.S. conformance with commitments under an international agreement, so even if the number of entities with process agent uses decreases in the future, EPA is determining that process agent data reported by the United States in accordance with commitments under the Montreal Protocol are not confidential.

Some of the data elements EPA is collecting may be similar to or the same as those required to be reported under the existing requirements associated with the GHGRP, particularly for entities subject to 40 CFR part 98, subpart L. Those reporting requirements are separate and the Agency is not making any changes to 40 CFR part 98 in this rulemaking. To the extent relevant, data elements submitted in accordance with requirements established through this rulemaking and determined to not be confidential under 40 CFR part 82, subpart A, will not be provided confidential treatment regardless of whether they have previously been determined to be confidential under the GHGRP.

Specifically, EPA proposed that the identity of byproducts manufactured in the process agent application; contact information for facilities that use controlled substances as process agents; emission data, including reported emission factors and the proposed ODS process agent monitoring plan; and technologies currently being used and actions taken to minimize use or emissions of controlled substances used as process agents would not be considered confidential. The Agency proposed in general, as described in more detail in a memorandum to the docket for this rulemaking, to determine the following information concerning ODS process agents as confidential: process agent sourcing; internal facility processes such as the quantity of process agent use, process agent recycling, process agent reuse, end products from the process agent application (e.g., chlorine from a chlor-alkali process), and byproducts (e.g., hydrogen from a chlor-alkali process); and emission reduction technologies and actions planned or currently under evaluation. As noted previously, the Agency expects to release aggregated data to the Ozone Secretariat, including ODS process agent information concerning process agent applications currently used in the United States, consumption, emissions, and emission reduction technologies and actions undertaken. Further, EPA would begin reporting emission data in metric tons instead of ODP-weighted metric tons.

One commenter supported EPA's proposal that data reported by the United States in accordance with commitments under the Montreal Protocol would not be confidential and stated that publishing this data is a requirement to assess the success of current emissions abatement technologies. The same commenter urged EPA to transparently share data on process agent emissions by specific use.

EPA acknowledges the commenter's support for the Agency's determination of the confidentiality of information submitted under the Montreal Protocol on behalf of the United States. The Agency reiterates that EPA may release and publish both data that has been determined to not be confidential and aggregated data derived from information that has been determined to be confidential. The Agency will further consider how such data may be shared.

Another commenter stated that certain data reporting elements established in this action, as addressed in sections III.A, III.B, and III.C of this preamble, meet the criteria to be considered confidential and requested that other elements that also meet those criteria may also be treated as confidential. The commenter requested that EPA confirm that the Agency will extend confidential treatment to all information submitted in the one-time and annual reports that meet FOIA exemptions. The commenter further stated that EPA should not preclude entities from claiming information as confidential in the reports if the item or process is not on EPA's list of items that should be identified as confidential information, but that does meet a FOIA statutory exemption. The commenter statements generally aligned with EPA's proposed confidentiality determinations.

In accordance with the process established in this action at 40 CFR 82.26, EPA is making determinations by rulemaking on data elements discussed in this section, as well as in the addendum provided in the docket for this action titled *Confidentiality Determinations and Emission Data Designations for Data Elements in the ODS Process Agents Reporting Final Rule*, about whether certain information is entitled to be treated confidentially. For information that must be reported as a result of this final rule for which EPA has not made a confidentiality determination, entities may claim the information as confidential and EPA will apply the 40 CFR part 2 process for case-by-case confidentiality determinations.

The commenter more specifically stated that percentages of class I controlled substances used as a process agent and retained, recovered, or entrained in the final product should be identified as confidential. The commenter noted that EPA had proposed to determine that information relating to internal process agent use, recycling, reuse, products, and byproducts would be confidential and requested that EPA clearly delineate that this information would be considered confidential. In support of its assertions, the commenter claimed that percentages and volumes, despite the few domestic manufacturers for some of the controlled substances, could reveal insights into a variety of sensitive considerations, including business decisions, production approaches, operational changes, and confidential manufacturing processes. The commenter specifically stated that percentages used as a process agent and then retained, recovered, or recycled, and the amounts of each product and byproduct manufactured during the prior control period, including the amounts destroyed or used as feedstock, are confidential. The commenter stated that there may be technologies or processes in place that reduce information (EPA understands the commenter as intending to refer to emissions) but are trade secrets or otherwise related to commercial information that qualify for exemptions as confidential under the Freedom of Information Act (FOIA).

As discussed in section III.A of the preamble, EPA disagrees that reported information on percentages of process agent used would disclose confidential information concerning overall production of the given controlled substances. The relevant data elements are, of the amount of controlled substance used as a process agent, what percentages in the process agent application were respectively retained, consumed, recovered, emitted, or entrained. These representative percentages of process agent use through a cycle of the process agent application would not compromise its manufacturing processes. With regard to the particular data elements, EPA acknowledges the commenter's support for its confidentiality determinations and determines, as proposed, that specific information related to internal processes, *i.e.*, the percentages retained within and recovered after the process agent application, and the amounts of each product and byproduct manufactured during the prior control period are confidential. The Agency also

determines, as proposed, that specific information related to emissions, *i.e.*, the percentages emitted from the facility or entrained in the final product, are not confidential. Additionally, EPA determines that the percentage consumed in the process agent application is not confidential. These determinations are listed in a memorandum to the docket for this rulemaking.

The commenter referenced EPA's proposed determinations of data elements for annual reports, including examples for internal facility processes. The commenter stated that this confidential information includes, but may not be limited to, information proposed to be submitted under 40 CFR 82.13(ee)(2)(iv) for the amount used as a process agent that was ultimately transformed, recycled, or destroyed, and under 40 CFR 82.13(ee)(2)(vi) for the amount of product and byproduct manufactured in the process agent application. The commenter further stated that production variability due to market variability is confidential, supported the Agency's proposed confidentiality determination concerning the proposed advance notice of change, and, if the requirements were to be finalized, encouraged EPA to confirm that the determination applies to information submitted in advance of a change.

EPA discusses comments concerning the annual report and advance notice of changes in sections III.B and C. of this preamble. As specified above in this section of the preamble, the Agency will treat the confidentiality of submitted information in accordance with its determinations by rulemaking. Entities may claim other information as confidential, and EPA will follow the process described in this section of the preamble. EPA acknowledges the commenter's support in general on the proposed confidentiality determinations and notes that the Agency is finalizing in this action a determination that the fact that an advance notice of changes was submitted is not confidential, but the changes themselves are confidential.

V. Definitions

EPA is finalizing a definition of "process agent" largely the same as the definition proposed, with the addition of a list explicitly including currently approved process agent uses, and is finalizing as proposed two definitions to better reflect current Agency and international practices. EPA is also adding definitions as part of the emission reporting requirements this action is establishing in 40 CFR 82.25.

EPA proposed to define the term "process agent" for the purposes of 40 CFR part 82 as "the use of a controlled substance to form the environment for a chemical reaction or inhibiting an unintended chemical reaction (*e.g.*, use as a solvent, catalyst, or stabilizer) where the controlled substance is not consumed in the reaction, but is removed or recycled back into the process and where no more than trace quantities remain in the final product. A feedstock, in contrast, is entirely consumed during the reaction." The Agency also proposed to switch the definitions of "facility" and "plant" in 40 CFR 82.3 to better align with how they would typically be understood and applied.

One commenter supported EPA's proposed definition of "process agent." EPA acknowledges the first commenter's support for the proposed definition of "process agent."

Another commenter suggested that specific measurable numerical thresholds for quantities retained in the final product or consumed during the reaction would provide regulatory clarity. The commenter recommended EPA define a residual concentration of process agent in a product as 0.01 percent by weight and to set a consumption rate of below one percent to distinguish a controlled substance used as a process agent from one use as a feedstock.

The Agency acknowledges the commenter's statement that including thresholds may provide additional clarity, but disagrees with the commenter's suggested changes. EPA did not propose numerical thresholds, the commenter did not provide supporting evidence to justify the particular suggested values, and it is not readily apparent what the appropriate thresholds for these process agent uses would be. In this action EPA is establishing reporting requirements for these process agent uses, including for information that would be relevant for further consideration of this issue. Specifically, as discussed in section III.A of this preamble, EPA is establishing requirements in the one-time report for companies to provide details of the amount of process agent used and of what percentages are subsequently retained within the process agent application, consumed during the process agent application, recovered after the process agent application, emitted, or entrained in the final product. EPA is not establishing numerical thresholds at this time, but will consider this information, as well as potential interactions with related

program areas, as relevant in any future determination the Agency may make.

A commenter who uses a controlled substance in a manufacturing process expressed concern that the definition EPA proposed could unintentionally exclude certain existing uses, including the commenter's use. The commenter noted that EPA had previously acknowledged that its use of a controlled substance constituted a process agent use, the same process agent use is listed in table A to decision XXXI/6, and the commenter has annually submitted information to EPA on this process agent use. For clarity and to include existing approved uses, this commenter recommended that the Agency revise the definition to reference, in addition to chemical changes, uses that result in forming the environment for or inhibiting an unintended physical change, and to specify a physical spinning/extruding process as an example. Alternatively, the commenter recommended to expand the definition to include any uses identified in the Technology and Economic Assessment Panel (TEAP)'s list of process agent usages, and included in Table A from a TEAP report.

EPA acknowledges the commenter's concerns that the text of the proposed definition of "process agent" could be interpreted to exclude existing process agent uses. The Agency understands, based on another TEAP report included in the comments, that the controlled substance in question is used as an extraction solvent associated with a chemical reaction process. EPA sought clarification from the commenter and confirmed that it does not use the process agent for other purposes. EPA did not intend in this definition to exclude existing process agent uses that EPA has previously recognized, as listed in footnote 6 to the proposed rule (88 FR 72030). However, EPA disagrees that it is appropriate or necessary to include physical changes in the definition. As EPA discussed in a similar context for HFC process agents (86 FR 55135), EPA does not have sufficient information to support a change. It is unclear what other processes might be included within that wider scope or what the potential implications may be of including physical changes in the definition. Furthermore, EPA does not agree that any uses listed by the TEAP should be incorporated into the definition. Table A, first established in decision X/14 and most recently updated in decision XXXI/6, includes all uses that have been permitted among the Parties to the Montreal Protocol, including those that have not been

approved for the United States. Table A may be subject to further updates by the Parties in the future, and EPA is aware that five of these uses continue in the United States. In this action EPA clarifies that the definition of "process agent" includes, but is not limited to, the use of the following controlled substances in the following process agent applications and therefore the existing use referenced by the commenter: the use of carbon tetrachloride in the elimination of nitrogen trichloride in chlor-alkali production, the use of carbon tetrachloride in the recovery of chlorine by tail gas absorption from chlor-alkali production, the use of CFC-11 in the production of synthetic fiber sheet, the use of bromochloromethane in bromination of a styrenic polymer, and the use of CFC-113 in the production of high modulus polyethylene fiber. This definition also includes any other uses of controlled substances that meet the functional criteria.

One commenter supported EPA's proposed definitions of "plant" and "facility." Another commenter stated that the Agency should change the term "plant" to "unit" or "process unit" because "plant" may be used synonymously as EPA's proposed definition of "facility." The commenter also stated that, in addition to process equipment, this definition should include a collection of process equipment.

EPA acknowledges the first commenter's support for the proposed definitions. In response to the second commenter, EPA recognizes that terminologies may vary between particular situations, the term "plant" may be used in similar contexts as "facility," the reference to process equipment could be applied more narrowly to a process unit, and that a plant would typically contain a collection or group of process equipment. However, multiple plants may be collocated within what is commonly considered a facility. These terms have particular relevance within EPA's domestic requirements and the Montreal Protocol. For example, in decision X/14 the Parties agreed, with certain conditions, that no new plants using the listed process agents would be installed or commissioned. This context more closely aligns with equipment associated with a process agent application than an overall industrial site. Similarly, a plant contains any process equipment associated with the relevant industrial operations. The definition of "plant" is intended to broadly encompass any individual piece or collection of equipment. EPA further

clarifies that this term includes any equipment that use controlled substances, such as process agents, related to industrial operations that convert raw materials, convert feedstock chemicals, or produce other chemicals. EPA is therefore not adopting the commenter's suggested changes to the definitions. Moreover, EPA expects the terminology, that is being finalized as proposed, will be clear for the limited set of entities subject to the requirements of 40 CFR part 82.

EPA is finalizing the definitions listed in the description of procedures to implement the proposed emission reporting requirements in 40 CFR part 82, subpart A. These definitions align with existing practice in 40 CFR part 98, subpart L, and the Agency did not receive comment on these definitions. The defined terms are: "batch emission episode," "batch process or batch operation," "byproduct," "continuous process or operation," "difficult-to-monitor," "dual mechanical seal pump and dual mechanical seal agitator," "equipment," "in controlled substance service," "in gas and vapor service," "in heavy liquid service," "in light liquid service," "in vacuum service," "isolated intermediate," "no external shaft pump and no external shaft agitator," "operating scenario," "process," "process condenser," "process vent," "typical batch," "uncontrolled emissions of controlled substances," and "unsafe-to-monitor."

VI. Costs and Benefits

The recordkeeping and reporting requirements EPA is establishing in this rule for uses of ODS as process agents in general codify existing practices and do not represent substantive additional effort on the part of affected entities. EPA is aware of six potentially affected entities, and expects that these entities are already able to meet most of the requirements based on current practice. These requirements will support U.S. efforts to report information consistent with Montreal Protocol decisions and to better understand potential implications of uses of ODS as process agents under the CAA.

EPA expects that entities that will be affected by this action are already subject to recordkeeping and reporting requirements under 40 CFR part 82 and that the requirements established in this action will not result in significant increased burden. In 40 CFR 82.13 and 82.24 the Agency had already required producers of controlled substance to record and report related information, including requirements in 40 CFR 82.13(f)(2)(vii) and 82.24(b)(2)(vi) to maintain records of any controlled

substance used as a feedstock, destroyed in the manufacture of another substance, used in the manufacture of any other substance, or introduced into the production process of the same controlled substance. EPA also requires documentation and reporting for uses of ODS in processes that result in their transformation or destruction. Subject entities have already reported similar information to EPA concerning uses of ODS as a process agent in the past on a voluntary basis, report similar information concerning production of ODS and feedstock uses, and already have available process knowledge and experience necessary to meet the recordkeeping and reporting requirements established in this action. The codified requirements will also reduce potential uncertainty about EPA's recordkeeping and reporting expectations.

This action will result in costs for each subject entity to prepare an initial one-time report, submit annual reports and notifications of significant changes as warranted, and recordkeeping. However, with regards to the annual reports, the Agency has historically solicited information from the affected entities via annual requests. Therefore, EPA expects any associated change in burden will be limited relative to past practice. The Agency conservatively estimates these requirements to result in costs of approximately \$13,000 per facility for the first year, with the higher costs due to initial preparation of the one-time report, and \$1,000 per facility in following years for continued compliance with the other recordkeeping and reporting requirements. As noted in section II.B. of this preamble, EPA does not anticipate the establishment of new processes or facilities using ODS as process agents. The Agency did not receive additional information on this assumption in response to a request for comment at proposal.

The Agency estimates that the annual emissions reporting requirements being finalized in this action, without accounting for past practice, will result in additional costs of approximately \$190,000 per facility in the first year due to initial planning and additional sampling, analysis, monitoring, and calculations. EPA estimates compliance costs of approximately \$17,000 in subsequent years for continued sampling, analysis, monitoring, and calculations. The total estimated costs for all requirements are approximately \$1.8 million in the first year and \$210,000 annually in subsequent years. The costs are discussed in the

supporting statement for the information collection request (ICR).

VII. Statutory and Executive Order Review

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 14094: Modernizing Regulatory Review

This action is not a significant regulatory action as defined in Executive Order 12866, as amended by Executive Order 14094, and was therefore not subject to a requirement for Executive Order 12866 review.

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule will be submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document that EPA prepared has been assigned EPA ICR number 1432.40. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

This ICR covers provisions under the Montreal Protocol and title VI of the CAA that establish limits on total U.S. production, import, and export of class I and class II ozone-depleting substances (or controlled substances). Production and import of class I controlled substances was phased out in the United States. The phaseout includes exceptions for essential uses, critical uses of methyl bromide, quarantine and pre-shipment uses of methyl bromide, previously used material, and material that will be transformed or destroyed. There are also regulations that restrict the use of class II controlled substances and require a gradual reduction in the production and consumption of these chemicals leading to their eventual phaseout. The class II controlled substance phaseout regulations include exceptions for previously used material and material that will be transformed or destroyed.

In this action, EPA is establishing requirements for one-time, annual, and situational reporting and for recordkeeping to provide relevant information to EPA concerning implications of process agent uses and emissions and support international agreements concerning the use of controlled substances as process agents. One-time reporting, annual reporting, and recordkeeping requirements are consistent with the existing requirements for importers and producers in 40 CFR 82.13 for class I controlled substances and 40 CFR 82.24 for class II controlled substances. These requirements are also consistent with

existing practice of facilities subject to this rule who have provided similar information to EPA concerning these uses of controlled substances as process agents. The ICR includes these incremental changes in addition to the existing reporting and recordkeeping programs that are approved under OMB control number 2060-0170.

Respondents/affected entities:

Producers, importers, exporters, and certain users of ozone-depleting substances, including as process agents; methyl bromide applicators, distributors, and end users including commodity storage and quarantine users.

Respondent's obligation to respond: Mandatory—sections 603(b), 604(d)(6), and 114 of the CAA.

Estimated number of respondents: 1,175.

Frequency of response: One-time, quarterly, annually, and as needed.

Total estimated burden: 8,905 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: \$1,122,911 (per year), including \$36,495 annualized capital or operation and maintenance costs.

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

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities because none of the identified affected entities are small entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of \$100 million (in 1995 dollars, adjusted annually for inflation) or more or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector, the cost is less than \$100 million.

E. Executive Order 13132: Federalism

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

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

This action does not have Tribal implications as specified in Executive Order 13175. EPA is not aware of Tribal businesses engaged in activities that would be directly affected by this action. Based on the Agency's assessments, as discussed in section VI of this preamble, EPA also does not believe that potential effects, even if direct, would be substantial. Accordingly, this action will not have substantial direct effects on one or more Indian Tribes, the relationship between the Federal Government and Indian Tribes, or the distribution of power and responsibilities between the Federal Government and Indian Tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action. The Agency has updated Tribal officials on this air regulation through a monthly meeting of the National Tribal Air Association.

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

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. Therefore, this action is not subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks. Since this action does not concern human health, EPA's Policy on Children's Health also does not apply.

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

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

I. National Technology Transfer and Advancement Act and Incorporation by Reference

This action involves technical standards. EPA has decided to allow the use of the following ASME, ASTM, and EPA standards as compliance options under the emission reporting requirements established in this action. These existing voluntary consensus standards were previously incorporated under the GHGRP in 40 CFR 98.7 to help facilities monitor, report, and keep records of GHG emissions. This version

of ASTM D6348-03 was previously incorporated by reference in 40 CFR 60.17 and the remaining standard versions, except for ASME MFC-4M-1986 (Reaffirmed 2016), were previously incorporated by reference in 40 CFR 98.7. ASME MFC-3M-2004 specifies the geometry and method of use for pressure difference devices which give necessary information for calculating flow rates and associated uncertainties. ASME MFC-4M-1986 (Reaffirmed 2016) specifies procedures to evaluate flow rates using turbine meters. ASME MFC-5M-1985 (Reaffirmed 1994) specifies procedures to evaluate flow rates using ultrasonic flowmeters that base their operation on the measurement of transit times of acoustic signals. ASME MFC-6M-1998 describes the use of vortex flowmeters to measure volumetric flow rate and total flow. ASME MFC-7M-1987 (Reaffirmed 1992) specifies the geometry and method of use for critical flow venturi nozzles. ASME MFC-9M-1988 (Reaffirmed 2001) specifies a method to calculate liquid flow rate and uncertainties by measuring the mass of liquid delivered into a weighing tank in a known time interval. ASME MFC-11M-2006 gives guidelines for the selection, installation, calibration, and operation of Coriolis flow meters for the determination of mass flow, density, volume flow, and other related parameters of flowing fluids. ASME MFC-14M-2003 specifies the geometry and method of use for orifice meters. The ASME standards are available for purchase from Two Park Avenue, New York, NY 10016, phone: 800.843.2763, email: CustomerCare@asme.org; website: www.asme.org. In this action EPA is incorporating by reference versions of these standards that are not available through the ASME website. These versions are available for purchase from private resellers, including Nimonik Document Center, 401 Roland Way, Suite 224, Oakland, CA 94624; phone (650)591-7600; email: info@document-center.com; website: www.document-center.com. The cost of an electronic copy is \$100 for ASME MFC-3M-2004, \$33 for ASME MFC-4M-1986 (Reaffirmed 2016), \$29 for ASME MFC-5M-1985 (Reaffirmed 1994), \$35 for ASME MFC-6M-1998, \$65 for ASME MFC-7M-1987 (Reaffirmed 1992), \$32 for ASME MFC-9M-1988 (Reaffirmed 2001), \$46 for ASME MFC-11M-2006, and \$40 for ASME MFC-14M-2003.

ASTM D6348-03 specifies a test method to quantify gas phase concentrations of target analytes by using extractive direct interface FTIR

spectroscopy. The ASTM International standard is available for purchase from ASTM International at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428; tel.: 610.832.9500; service@astm.org; website: <https://www.astm.org/>. The cost of an electronic copy is \$83 for ASTM D6348-03. The cost of obtaining the applicable ASME and ASTM standards is not a significant financial burden.

EPA's Approved Alternative Method 012 specifies procedures to use a tracer gas to determine the stack gas volumetric flow rate when low velocities and temporal variations complicate measurement. The Emissions Inventory Improvement Program, Volume II: Chapter 16 provides methods for estimating air emissions from chemical manufacturing facilities. EPA-453/R-95-017 provides a protocol to generic process unit-specific estimates for equipment leak emissions. EPA-430-R-10-003 provides a protocol for two specific methods for measuring abatement system inlet and outlet flows, and hence destruction or removal efficiencies, for process equipment. EPA's Other Test Method 24 specifies a tracer gas procedure with a gas chromatograph and flame ionizer detector to measure the volumetric flow rate. The EPA standards are freely available from U.S. Environmental Protection Agency at 1200 Pennsylvania Avenue NW, Washington, DC 20460, 202.272.0167, <https://www.epa.gov>. Electronic copies are available at <https://www.epa.gov/sites/default/files/2020-08/documents/alt-012.pdf> for Approved Alternative Method 012; https://www.epa.gov/sites/default/files/2015-08/documents/ii16_aug2007final.pdf for Emissions Inventory Improvement Program, Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007; https://www.epa.gov/sites/default/files/2020-09/documents/protocol_for_equipment_leak_emission_estimates.pdf, November 1995 for EPA-453/R-95-017; https://www.epa.gov/sites/default/files/2016-02/documents/dre_protocol.pdf, March 2010 for EPA 430-R-10-003; and <https://www.epa.gov/sites/default/files/2020-08/documents/otm24.pdf> for Other Test Method 24. Therefore, EPA concludes that the ASME, ASTM, and EPA standards being incorporated by reference are reasonably available.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations and Executive Order 14096: Revitalizing Our Nation's Commitment to Environmental Justice for All

EPA believes that this type of action does not concern human health or environmental conditions and therefore cannot be evaluated with respect to potentially disproportionate and adverse effects on communities with environmental justice concerns because it does not impact emissions from subject facilities. This regulatory action establishes reporting and recordkeeping requirements that do not impact human health or the environment, but provide additional insight into the uses and emissions of ODS used as process agents.

K. Congressional Review Act (CRA)

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

List of Subjects in 40 CFR Part 82

Environmental protection, Chemicals, Emissions, Incorporation by reference, Reporting and recordkeeping requirements.

Michael S. Regan,
Administrator.

For the reasons set out in the preamble, 40 CFR part 82 is amended as follows:

PART 82—PROTECTION OF STRATOSPHERIC OZONE

■ 1. The authority citation for part 82 continues to read as follows:

Authority: 42 U.S.C. 7414, 7601, 7671–7671q.

■ 2. Amend § 82.3 by:

■ a. Adding the definitions of "Batch emission episode", "Batch process or batch operation", "Byproduct", "Continuous process or operation", "Difficult-to-monitor", "Dual mechanical seal pump and dual mechanical seal agitator", and "Equipment" in alphabetical order;

■ b. Revising the definition of "Facility";

■ c. Adding the definitions of "In controlled substance service", "In gas and vapor service", "In heavy liquid service", "In light liquid service", "In vacuum service", "Isolated intermediate", "No external shaft pump and no external shaft agitator", and

"Operating scenario" in alphabetical order;

■ d. Revising the definition of "Plant"; and

■ e. Adding the definitions of "Process", "Process agent", "Process condenser", "Process vent", "Typical batch", "Uncontrolled emissions of controlled substances", and "Unsafe-to-monitor" in alphabetical order.

The additions and revisions read as follows:

§ 82.3 Definitions for class I and class II controlled substances.

* * * * *

Batch emission episode means a discrete venting episode associated with a vessel in a process; a vessel may have more than one batch emission episode. For example, a displacement of vapor resulting from the charging of a vessel with a feed material will result in a discrete emission episode that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vapor. Other emission episodes also may occur from the same vessel and other vessels in the process, depending on process operations.

Batch process or batch operation means a noncontinuous operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of the equipment after the batch operation ceases and prior to beginning a new operation. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation.

* * * * *

Byproduct (for the purpose of this subpart only) means a chemical that is produced coincidentally during the production of another chemical.

* * * * *

Continuous process or operation means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady state.

* * * * *

Difficult-to-monitor means the equipment piece may not be monitored without elevating the monitoring personnel more than 2 meters (7 feet) above a support surface or it is not accessible in a safe manner when it is in controlled substance service.

* * * * *

Dual mechanical seal pump and dual mechanical seal agitator means a pump or agitator equipped with a dual mechanical seal system that includes a

barrier fluid system where the barrier fluid is not in light liquid service; each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both; and meets the following requirements:

(1) Each dual mechanical seal system is operated with the barrier fluid at a pressure that is at all times (except periods of startup, shutdown, or malfunction) greater than the pump or agitator stuffing box pressure; or

(2) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device; or

(3) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

* * * * *

Equipment (for the purposes of § 82.25 only) means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in controlled substance service for a process listed in § 82.25(b)(2); and any destruction units or closed-vent systems to which corresponding processes are vented.

* * * * *

Facility means one or more plants at the same location owned by or under common control of the same person.

* * * * *

In controlled substance service means that a piece of equipment that engages in an activity listed in § 82.25(b)(2), either contains or contacts a controlled substance that is a liquid or gas, and contains at least 5 percent by weight of a controlled substance.

In gas and vapor service means that a piece of equipment in regulated material service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in regulated material service is not in gas and vapor service or in light liquid service.

In light liquid service means that a piece of equipment in regulated material service contains a liquid that meets the following conditions:

(1) The vapor pressure of one or more of the compounds is greater than 0.3 kilopascals at 20 °C;

(2) The total concentration of the pure compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream; and

(3) The fluid is a liquid at operating conditions.

Note 1 to definition of "in light liquid service": Vapor pressures may be determined by standard reference texts or ASTM D–2879.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

* * * * *

Isolated intermediate means a product of a process that is stored before subsequent processing. An isolated intermediate is usually a product of chemical synthesis. Storage of an isolated intermediate marks the end of a process. Storage occurs at any time the intermediate is placed in equipment used solely for storage.

* * * * *

No external shaft pump and no external shaft agitator means any pump or agitator that is designed with no externally actuated shaft penetrating the pump or agitator housing.

* * * * *

Operating scenario means any specific operation of a process and includes the information specified in paragraphs (1) through (5) of this definition for each process. A change or series of changes to any of these elements, except for paragraph (4) of this definition, constitutes a different operating scenario.

(1) A description of the process, the specific process equipment used, and the range of operating conditions for the process.

(2) An identification of related process vents, their associated emissions episodes and durations, and calculations and engineering analyses to show the annual uncontrolled emissions of controlled substances from the process vent.

(3) The control or destruction units used, as applicable, including a description of operating and/or testing conditions for any associated destruction unit.

(4) The process vents (including those from other processes) that are simultaneously routed to the control or destruction unit(s).

(5) The applicable monitoring requirements and any parametric level that assures destruction or removal for all emissions routed to the control or destruction unit.

* * * * *

Plant means any process equipment (e.g., reactor, distillation column) used to convert raw materials or feedstock chemicals into controlled substances or use controlled substances in the production of other chemicals.

* * * * *

Process (for the purposes of § 82.25 only) means all equipment that collectively functions to engage in an activity listed in § 82.25(b)(2). A process may consist of one or more unit

operations. For the purposes of § 82.25, process includes any, all, or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to engage in an activity listed in § 82.25(b)(2). For a continuous process, cleaning operations may be considered part of the process at the discretion of the facility. For a batch process, cleaning operations are part of the process. Ancillary activities are not considered a process or part of any process under § 82.25. Ancillary activities include boilers and incinerators, 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 an activity listed in § 82.25(b)(2).

Process agent means a controlled substance used to form the environment for a chemical reaction or inhibit an unintended chemical reaction (e.g., use as a solvent, catalyst, or stabilizer) where the controlled substance is not consumed in the reaction, but is removed or recycled back into the process and where no more than trace quantities remain in the final product. A feedstock, in contrast, is consumed during the reaction. The term process agent includes, but is not limited to: carbon tetrachloride used in the elimination of nitrogen trichloride in chlor-alkali production, carbon tetrachloride used in the recovery of chlorine by tail gas absorption from chlor-alkali production, CFC-11 used in the production of synthetic fiber sheet, bromochloromethane used in the bromination of a styrenic polymer, and CFC-113 used in the production of high modulus polyethylene fiber.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of a process. All condensers recovering condensate from a process vent at or above the boiling point or all condensers in line prior to a vacuum source are considered process condensers. Typically, a primary condenser or condensers in series are considered to be integral to the process if they are 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.

Process vent means a vent from a process vessel or vents from multiple process vessels within a process that are manifolded together into a common header, through which a controlled substance-containing gas stream is, or has the potential to be, released to the atmosphere (or the point of entry into a

control device, if any). Examples of process vents include, but are not limited to, vents on condensers used for product recovery, bottoms receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Process vents do not include vents on storage tanks, wastewater emission sources, or pieces of equipment.

* * * * *

Typical batch means a batch process operated within a range of operating conditions that are documented in an operating scenario. Emissions from a typical batch are based on the operating conditions that result in representative emissions. The typical batch defines the uncontrolled emissions for each emission episode defined under the operating scenario.

Uncontrolled emissions of controlled substance means a gas stream containing a controlled substance which has exited the process (or process condenser or control condenser, where applicable), but which has not yet been introduced into a destruction unit to reduce the mass of controlled substance in the stream. If the emissions from the process are not routed to a destruction unit, uncontrolled emissions are those controlled substance emissions released to the atmosphere.

* * * * *

Unsafe-to-monitor means that monitoring personnel would be exposed to an immediate danger as a consequence of monitoring the piece of equipment. Examples of unsafe-to-monitor equipment include, but are not limited to, equipment under extreme pressure or heat.

* * * * *

- 3. Amend § 82.13 by:
 - a. In paragraph (c), adding the words “or another format specified by EPA” after the words “Central Data Exchange”; and
 - b. Adding paragraph (ee).

The addition reads as follows:

§ 82.13 Recordkeeping and reporting requirements for class I controlled substances.

* * * * *

(ee) *Process agents*. Any entity that uses a class I controlled substance as a process agent must comply, in addition to the recordkeeping and reporting requirements in § 82.25, with the following recordkeeping and reporting requirements for each facility that uses a class I controlled substance as a process agent:

(1) *Reporting—one-time report*. By February 7, 2025, or within 120 days of the date that an entity first uses a class I controlled substance as a process

agent, whichever is later, any entity that uses a class I controlled substance as a process agent must submit to the Administrator a report containing the following information for each use of a class I controlled substance as a process agent:

(i) The name and address of each facility and plant, and each responsible person's name, email address, and phone number;

(ii) The name, purpose, and final product manufactured of each process agent application that uses a class I controlled substance;

(iii) The start-up date of each facility and the start-up date of each plant that uses a class I controlled substance as a process agent;

(iv) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;

(v) For each facility, the total air, fugitive air, and stack point air emissions of class I controlled substances used as a process agent during the previous control period;

(vi) For each facility, a description of technologies currently being used and actions taken or currently under evaluation to minimize use or emissions of class I controlled substances used as process agents (including estimated emissions reductions associated with each); and

(vii) For each facility, a description that includes details of the percentages of class I controlled substances used as a process agent and:

(A) Retained within the process agent application;

(B) Consumed in the process agent application;

(C) Recovered after the process agent application;

(D) Emitted; and

(E) Entrained in the final product.

(2) *Annual reports.* Any entity that uses a class I controlled substance as a process agent must provide by February 14 of each year an annual report for the previous control period containing the following information for each use of the class I controlled substance as a process agent:

(i) For each facility, contact information including email address and phone number for a primary and alternate contact person;

(ii) For each facility, the name and amount of each class I controlled substance initially introduced into the process agent application for use as a process agent, specified independently for paragraphs (ee)(2)(ii)(A) through (G)

of this section by whether the class I controlled substance was:

(A) Obtained as virgin;

(B) Obtained as used;

(C) Produced by the entity;

(D) Purchased from a U.S. producer;

(E) Imported;

(F) Reclaimed by the entity from a different use; and

(G) Reclaimed by another entity;

(iii) For each facility, the name and amount of each class I controlled substance used as a process agent and reused or recycled for use by the entity for continued use in the same process agent application at the same facility;

(iv) For each facility, the name and amount of each class I controlled substance used as a process agent that was ultimately:

(A) Transformed;

(B) Reused or recycled for use in a different process agent application; or

(C) Destroyed by approved destruction technologies;

(v) For each facility, the total air, fugitive air, and stack point air emissions of each class I controlled substance used as a process agent;

(vi) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;

(vii) For each facility, a description of emission reduction actions for class I controlled substances used as a process agent taken since the last one-time or annual report, planned, or currently under evaluation; and

(viii) For each entity, any process agent application changes anticipated to result in increases for the next annual report, as compared to the previous control period and the average of the three previous control periods, of the following magnitude must be specified in a report submitted to EPA at least 180 days prior to implementing the change:

(A) Greater than 20 percent of the amount of class I controlled substance initially introduced for use as a process agent; or

(B) At least one metric ton and 20 percent of the amount emitted during use as a process agent.

(3) *Recordkeeping.* Every entity who uses a class I controlled substance as a process agent during a control period must maintain the following records, as applicable:

(i) Dated records of the quantity of each class I controlled substance initially introduced at each facility into the process application for use as a process agent;

(ii) Dated records of the quantity of each class I controlled substance

produced at each facility for use as a process agent;

(iii) Records identifying the producer or importer of the class I controlled substance received at each facility for use as a process agent by the entity;

(iv) For each facility, copies of the invoices or receipts documenting the sale or other transfer of ownership of each class I controlled substance for use as a process agent to the entity;

(v) Dated records identifying the quantity of each product manufactured within each facility by using a class I controlled substance as a process agent;

(vi) For each facility, records of the date and the estimated quantity of any spill or release of each class I controlled substance used as a process agent that equals or exceeds 100 pounds;

(vii) For each facility, a description of the methodology used to measure and calculate emissions, and dated records of equipment parameters, measured data, supporting calculations, and other rationale used to validate reported emission quantities;

(viii) For each facility, dated records of the quantity of each class I controlled substance used as a process agent which is subsequently transformed or destroyed;

(ix) In the case where class I controlled substances used as a process agent were ultimately transformed by an entity other than the entity which last used the class I controlled substances as a process agent, a copy of the Internal Revenue Service Certificate showing that the purchaser or recipient of the controlled substance, in the United States or in another country that is a Party, certifies the intent to transform the controlled substance, or sell the controlled substance for transformation; and

(x) In the case where class I controlled substances used as a process agent were ultimately destroyed by an entity other than the entity which last used the class I controlled substances as a process agent, a copy of the destruction verification (as in paragraph (k) of this section), showing that the purchaser or recipient of a controlled substance, in the United States or in another country that is a Party, certifies the intent to destroy the controlled substance, or sell the controlled substance for destruction.

(4) *Request for extension.* Any entity that uses a class I controlled substance as a process agent may request an extension to comply with paragraph (ee)(1) of this section.

(i) This request must include the following information:

(A) Name of the facility submitting the request, contact information for a

person at the facility, and the address of the facility;

(B) An explanation of the reasons that an extension is necessary and the timeline that would be practicable; and

(C) Supporting documentation of the circumstances.

(ii) The Administrator will review the request and, within five working days of receiving a complete request, provide notification of whether the request is granted and when the report is due.

(5) *Notification that use has ceased.* Reports are no longer required for process agent use starting in the year after an entity notifies the Administrator that they have permanently ceased use of all class I controlled substances as a process agent, but the entity must continue to comply with all applicable recordkeeping requirements.

§ 82.14 [Amended]

■ 4. Amend § 82.14, in paragraph (a), by adding the words “or another format specified by EPA” after the words “Central Data Exchange.”

■ 5. Amend § 82.24 by:

■ a. In paragraph (a)(1), adding the words “or another format specified by EPA” after the words “Central Data Exchange”; and

■ b. Adding paragraph (g).

The addition reads as follows:

§ 82.24 Recordkeeping and reporting requirements for class II controlled substances.

* * * * *

(g) *Process agents.* Any entity that uses a class II controlled substance as a process agent must comply, in addition to the recordkeeping and reporting requirements in § 82.25, with the following recordkeeping and reporting requirements for each facility that uses a class II controlled substance as a process agent:

(1) *Reporting—one-time report.* By February 7, 2025, or within 120 days of the date that an entity first uses a class II controlled substance as a process agent, whichever is later, any entity that uses a class II controlled substance as a process agent must submit to the Administrator a report containing the following information for each use of a class II controlled substance as a process agent:

(i) The name and address of each facility and plant, and each responsible person’s name, email address, and phone number;

(ii) The name, purpose, and final product manufactured of each process agent application that uses a class II controlled substance;

(iii) The start-up date of each facility and the start-up date of each plant that

uses a class II controlled substance as a process agent;

(iv) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;

(v) For each facility, the total air, fugitive air, and stack point air emissions of class II controlled substances used as a process agent during the previous control period;

(vi) For each facility, a description of technologies currently being used and actions taken or currently under evaluation to minimize use or emissions of class II controlled substances used as process agents (including estimated emissions reductions associated with each); and

(vii) For each facility, a description that includes details of the percentages of class II controlled substances used as a process agent and:

(A) Retained within the process agent application;

(B) Consumed in the process agent application;

(C) Recovered after the process agent application;

(D) Emitted; and

(E) Entrained in the final product.

(2) *Annual reports.* Any entity that uses a class II controlled substance as a process agent must provide by February 14 of each year an annual report for the previous control period containing the following information for each use of the class II controlled substance as a process agent:

(i) For each facility, contact information including email address and phone number for a primary and alternate contact person;

(ii) For each facility, the name and amount of each class II controlled substance initially introduced into the process agent application for use as a process agent, specified independently for paragraphs (g)(2)(ii)(A) through (G) of this section by whether the class II controlled substance was:

(A) Obtained as virgin;

(B) Obtained as used;

(C) Produced by the entity;

(D) Purchased from a U.S. producer;

(E) Imported;

(F) Reclaimed by the entity from a different use; and

(G) Reclaimed by another entity;

(iii) For each facility, the name and amount of each class II controlled substance used as a process agent and reused or recycled for use by the entity for continued use in the same process agent application at the same facility;

(iv) For each facility, the name and amount of each class II controlled

substance used as a process agent that was ultimately:

(A) Transformed;

(B) Reused or recycled for use in a different process agent application; or

(C) Destroyed by approved destruction technologies;

(v) For each facility, the total air, fugitive air, and stack point air emissions of each class II controlled substance used as a process agent;

(vi) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;

(vii) For each facility, a description of emission reduction actions for class II controlled substances used as a process agent taken since the last one-time or annual report, planned, or currently under evaluation; and

(viii) For each entity, any process agent application changes anticipated to result in increases for the next annual report, as compared to the previous control period and the average of the three previous control periods, of the following magnitude must be specified in a report submitted to EPA at least 180 days prior to implementing the change:

(A) Greater than 20 percent of the amount of class II controlled substance initially introduced for use as a process agent; or

(B) At least one metric ton and 20 percent of the amount emitted during use as a process agent.

(3) *Recordkeeping.* Every entity who uses a class II controlled substance as a process agent during a control period must maintain the following records, as applicable:

(i) Dated records of the quantity of each class II controlled substance initially introduced at each facility into the process application for use as a process agent;

(ii) Dated records of the quantity of each class II controlled substance produced at each facility for use as a process agent;

(iii) Records identifying the producer or importer of the class II controlled substance received at each facility for use as a process agent by the entity;

(iv) For each facility, copies of the invoices or receipts documenting the sale or other transfer of ownership of each class II controlled substance for use as a process agent to the entity;

(v) Dated records identifying the quantity of each product manufactured within each facility by using a class II controlled substance as a process agent;

(vi) For each facility, records of the date and the estimated quantity of any spill or release of each class II

controlled substance used as a process agent that equals or exceeds 100 pounds;

(vii) For each facility, a description of the methodology used to measure and calculate emissions, and dated records of equipment parameters, measured data, supporting calculations, and other rationale used to validate reported emission quantities;

(viii) For each facility, dated records of the quantity of each class II controlled substance used as a process agent which is subsequently transformed or destroyed;

(ix) In the case where class II controlled substances used as a process agent were ultimately transformed by an entity other than the entity which last used the class II controlled substances as a process agent, a copy of the entity's transformation verification as provided under paragraph (e)(3) of this section; and

(x) In the case where class II controlled substances used as a process agent were ultimately destroyed by an entity other than the entity which last used the class II controlled substances as a process agent, a copy of the entity's destruction verification, as provided under paragraph (e)(5) of this section.

(4) *Request for extension.* Any entity that uses a class II controlled substance as a process agent may request an extension to comply with paragraph (g)(1) of this section.

(i) This request must include the following information:

(A) Name of the facility submitting the request, contact information for a person at the facility, and the address of the facility;

(B) An explanation of the reasons that an extension is necessary and the timeline that would be practicable; and

(C) Supporting documentation of the circumstances.

(ii) The Administrator will review the request and, within five working days of receiving a complete request, provide notification of whether the request is granted and when the report is due.

(5) *Notification that use has ceased.* Reports are no longer required for process agent use starting in the year after an entity notifies the Administrator that they have permanently ceased use of all class II controlled substances as a process agent, but the entity must continue to comply with all applicable recordkeeping requirements.

■ 6. Add § 82.25 to read as follows:

§ 82.25 Emissions of controlled substances from industrial sources.

(a) *Source applicability.* The requirements specified in this section apply to every entity which engages in any of the following activities:

(1) Use of a controlled substance as a process agent.

(2) [Reserved]

(b) *Emissions of controlled substances to report.* Every entity that engages in any activity listed in paragraph (a) of this section must report, for each applicable facility, emissions of the controlled substances in paragraph (b)(1) of this section from the processes listed in paragraph (b)(2) of this section.

(1) *Emissions of controlled substances.* For purposes of reporting emissions under this section, the term "controlled substance" applies to the following controlled substances:

(i) Each controlled substance used as a process agent.

(ii) [Reserved]

(2) *Processes.* For purposes of this section, the term "process" applies to the following activities:

(i) Each activity listed in paragraph (a) of this section;

(ii) Each separation process for the reuse or recycling of the controlled substance;

(iii) Each transformation process of the controlled substance, where the controlled substance is produced at the facility and used in processes resulting in its transformation at the same facility;

(iv) Each transformation process of the controlled substance at the facility, where one or more of the controlled substances transformed at the facility is produced at another facility; and

(v) Each destruction process of the controlled substance.

(c) *Calculating emissions for controlled substances.* For every activity listed in paragraph (a) of this section, each entity must calculate emissions of the controlled substances from each process using the emission factor, emission calculation factor, or mass balance method specified in paragraphs (c)(1) through (4) of this section, as appropriate. The mass balance method may only be used for batch operations without on-site production or transformation of controlled substances. For destruction processes that destroy controlled substances, the entity must calculate emissions using the procedures in paragraph (c)(4) of this section.

(1) *Emission factor and emission calculation factor methods.* To use the method in this paragraph (c)(1) for batch processes, each entity must use the methods in either paragraph (c)(1)(iii) (Emission Factor approach) or (iv) (Emission Calculation Factor approach) of this section. To use the method in this paragraph (c)(1) for continuous processes, the entity must first make a preliminary estimate of the emissions from each individual continuous

process vent under paragraph (c)(1)(i) of this section. If the entity's continuous process operates under different conditions as part of normal operations, that entity must also define the different operating scenarios and make a preliminary estimate of the emissions from the vent for each operating scenario. Then, compare the preliminary estimate for each continuous process vent (summed across operating scenarios) to the criteria in paragraph (c)(1)(ii) of this section to determine whether the process vent meets the criteria for using the emission factor method described in paragraph (c)(1)(iii) of this section or whether the process vent meets the criteria for using the emission calculation factor method described in paragraph (c)(1)(iv) of this section. For continuous process vents that meet the criteria for using the emission factor method described in paragraph (c)(1)(iii) of this section and that have more than one operating scenario, compare the preliminary estimate for each operating scenario to the criteria in paragraph (c)(1)(iii)(B) of this section to determine whether an emission factor must be developed for that operating scenario.

(i) *Preliminary estimate of emissions by process vent.* Each entity must estimate the annual emissions of the controlled substance for each process vent within each operating scenario of a continuous process using the approaches specified in paragraph (c)(1)(i)(A) or (B) of this section, accounting for any destruction as specified in paragraph (c)(1)(i)(C) of this section. The entity must determine emissions of controlled substances by process vent by using measurements, by using calculations based on chemical engineering principles and chemical property data, or by conducting an engineering assessment. The entity may use previously conducted measurements, calculations, or assessments if they represent current process operating conditions or process operating conditions that would result in higher controlled substance emissions than the current operating conditions and if they were performed in accordance with paragraph (c)(1)(i)(A), (B), or (C) of this section, as applicable. The entity must document all data, assumptions, and procedures used in the calculations or engineering assessment and keep a record of the emissions determination as required by paragraph (f)(1) of this section.

(A) *Engineering calculations.* For process vent emission calculations, each entity may use any of paragraph (c)(1)(i)(A)(1), (2), or (3) of this section.

(1) U.S. Environmental Protection Agency, Emission Inventory Improvement Program, Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007, Final (incorporated by reference, see § 82.27).

(2) Each entity may determine the controlled substance emissions from any process vent within the process using the procedures specified in § 63.1257(d)(2)(i) and (d)(3)(i)(B) of this chapter, except as specified in paragraphs (c)(1)(i)(A)(2)(i) through (iv) of this section. For the purposes of this section, use of the term “HAP” in § 63.1257(d)(2)(i) and (d)(3)(i)(B) of this chapter means “controlled substance.”

(i) To calculate emissions caused by the heating of a vessel without a process condenser to a temperature lower than the boiling point, each entity must use the procedures in § 63.1257(d)(2)(i)(C)(3) of this chapter.

(ii) To calculate emissions from depressurization of a vessel without a process condenser, each entity must use the procedures in § 63.1257(d)(2)(i)(D)(10) of this chapter.

(iii) To calculate emissions from vacuum systems, the terms used in equation 33 to § 63.1257(d)(2)(i)(E) of this chapter are defined as follows. P_{system} means the absolute pressure of the receiving vessel. P_i means the partial pressure of the controlled substance determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver. P_j means the partial pressure of condensables (including controlled substances) determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver. $MW_{\text{controlled substance}}$ means the molecular weight of the controlled substance determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

(iv) To calculate emissions when a vessel is equipped with a process condenser or a control condenser, each entity must use the procedures in § 63.1257(d)(3)(i)(B) of this chapter, except as follows. Each entity must determine the flow rate of gas (or volume of gas), partial pressures of condensables, temperature (T), and controlled substance molecular weight ($MW_{\text{controlled substance}}$) at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver. Each entity must assume that all of the components contained in the condenser exit vent stream are in equilibrium with

the same components in the exit condensate stream (except for noncondensables). Each entity must perform a material balance for each component, if the condensate receiver composition is not known. For the emissions from purging, the term for time, t, must be used in equation 12 to § 63.1257(d)(2)(i)(B) of this chapter. Emissions from empty vessel purging must be calculated using equation 36 to § 63.1257(d)(2)(i)(H) of this chapter and the exit temperature and exit pressure conditions of the condenser or the conditions of the dedicated receiver.

(3) Commercial software products that follow chemical engineering principles (e.g., including the calculation methodologies in paragraphs (c)(1)(i)(A)(1) and (2) of this section).

(B) *Engineering assessments.* For process vent emissions determinations, each entity may conduct an engineering assessment to calculate uncontrolled emissions. An engineering assessment includes, but is not limited to, the following:

(1) Previous test results, provided the tests are representative of current operating practices of the process.

(2) Bench-scale or pilot-scale test data representative of the process operating conditions.

(3) Maximum flow rate, controlled substance emission rate, concentration, or other relevant parameters specified or implied within a permit limit applicable to the process vent.

(4) Design analysis based on chemical engineering principles, measurable process parameters, or physical or chemical laws or properties.

(C) *Impact of destruction for the preliminary estimate.* If the process vent is vented to a destruction unit, each entity may reflect the impact of the destruction unit on emissions. In the emissions estimate, account for the following:

(1) The demonstrated destruction efficiencies of the device for the controlled substance in the vent stream for periods when the destruction device is in use.

(2) Any periods when the process vent is not vented to the destruction unit.

(D) *Use of typical recent values.* In the calculations in paragraphs (c)(1)(i)(A) through (C) of this section, the values used for the expected process activity and for the expected fraction of that activity, whose emissions will be vented to the properly functioning destruction unit, must be based on either typical recent values for the process or values that overestimate emissions from the process, unless there is a compelling reason to adopt a different value (e.g.,

installation of a destruction unit for a previously uncontrolled process). If there is such a reason, it must be documented in the monitoring plan.

(ii) *Method selection for continuous process vents.* (A) Based on the calculations under paragraph (c)(1)(i) of this section, as well as any subsequent measurements and calculations under this section, rank the process vents based on controlled substance emissions, upstream of any destruction unit, summed across all operating scenarios, from largest to smallest estimated annual emissions of controlled substances. The continuous process vents that comprise the top quartile of estimated annual emissions of controlled substances must use the method in paragraph (c)(1)(iii) of this section (Emission Factor approach). The process vent emissions will be based on the past 3 years for the ranking analysis.

(B) The remaining continuous process vents that comprise the bottom three quartiles of estimated annual emissions of controlled substances may use either the emission factor method specified in paragraph (c)(1)(iii) of this section (Emission Factor approach) or a method specified in paragraph (c)(1)(iv) of this section (Emission Calculation Factor approach).

(1) Each entity must conduct emission testing for process-vent-specific emission factor development upstream of the destruction unit.

(2) The emission testing for process-vent-specific emission factor development may be conducted on the outlet side of a wet scrubber in place for acid gas reduction, if there is no appreciable reduction in the controlled substance by the wet scrubber.

(iii) *Process-vent-specific emission factor method.* For each process vent, each entity must conduct an emission test according to the procedures in paragraph (d) of this section and measure the process activity, such as the feed rate, production rate, or other process activity rate, during the test as described in this paragraph (c)(1)(iii). All emissions test data and procedures used in developing emission factors must be documented according to paragraph (f) of this section. If more than one operating scenario applies to the process that contains the subject process vent, each entity must use the method in either paragraph (c)(1)(iii)(A) or (B) of this section.

(A) Conduct a separate emissions test for operation under each operating scenario.

(B) Conduct an emissions test for the operating scenario that is expected to have the largest emissions of controlled substances (considering both activity

levels and emission calculation factors) on an annual basis. Also conduct an emissions test for each additional operating scenario for which the emission calculation factor differs by 15 percent or more from the emission calculation factor of the operating scenario that is expected to have the largest emissions (or of another operating scenario for which emission testing is performed), unless the difference between the operating scenarios is solely due to the application of a

destruction unit to emissions under one of the operating scenarios. For any other operating scenarios, adjust the process-vent specific emission factor developed for the operating scenario that is expected to have the largest emissions (or for another operating scenario for which emission testing is performed) using the approach in paragraph (c)(1)(iii)(G) of this section.

(C) Each entity must measure the process activity, such as the process feed rate, process production rate, or other process activity rate, as applicable,

during the emissions test and calculate the rate for the test period, in kg (or another appropriate metric) per hour.

(D) For continuous processes, each entity must calculate the hourly emission rate of each controlled substance using equation 1 to this paragraph (c)(1)(iii)(D) and determine the hourly emission rate of each controlled substance per process vent (and per operating scenario, as applicable) for the test run.

Equation 1 to Paragraph (c)(1)(iii)(D)

$$E_{ContPV} = \frac{C_{PV}}{10^6} * MW * Q_{PV} * \frac{1}{SV} * \frac{1}{10^3} * \frac{60}{1}$$

Where:

E_{ContPV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, during the emission test during test run r (kg/hr).

C_{PV} = Concentration of controlled substance p during test run r of the emission test (ppmv).

MW = Molecular weight of controlled substance p (g/g-mole).

Q_{PV} = Flow rate of the process vent stream during test run r of the emission test (m³/min).

SV = Standard molar volume of gas (0.0240 m³/g-mole at 68 °F and 1 atm).

1/10³ = Conversion factor (1 kilogram/1,000 grams).

60/1 = Conversion factor (60 minutes/1 hour).

(E) Each entity must calculate a site-specific, process-vent-specific emission factor for each controlled substance for each process vent and each operating scenario, in kg of controlled substance per process activity rate (e.g., kg of feed or production), as applicable, using equation 2 to this paragraph (c)(1)(iii)(E). For continuous processes, divide the hourly controlled substance emission rate during the test by the hourly process activity rate during the test runs.

Equation 2 to Paragraph (c)(1)(iii)(E)

$$EF_{PV} = \frac{\sum_1^r \left(\frac{E_{PV}}{Activity_{EmissionTest}} \right)}{r}$$

Where:

EF_{PV} = Emission factor for controlled substance p emitted from process vent v during process i, operating scenario j (e.g., kg emitted/kg activity).

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, during the emission test during test run r, for either continuous or batch (kg emitted/hr for continuous, kg emitted/batch for batch).

$Activity_{EmissionTest}$ = Process feed, process production, or other process activity rate for process i, operating scenario j, during the emission test during test run r (e.g., kg product/hr).

r = Number of test runs performed during the emission test.

(F) If emissions testing is conducted upstream of the destruction unit, apply the destruction efficiencies of the device that have been demonstrated for the controlled substance in the vent stream to the controlled substance emissions for the process vent (and operating scenario, as applicable), using equation 3 to this paragraph (c)(1)(iii)(F). Each entity may apply the destruction efficiency only to the portion of the process activity during which emissions are vented to the properly functioning destruction unit (i.e., controlled).

Equation 3 to Paragraph (c)(1)(iii)(F)

$$E_{PV} = EF_{PV-U} * (Activity_u + Activity_c * (1 - DE))$$

Where:

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, considering destruction efficiency (kg).

EF_{PV-U} = Emission factor (uncontrolled) for controlled substance p emitted from process vent v during process i, operating scenario j (kg emitted/kg product).

$Activity_u$ = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is not vented to the properly functioning destruction unit (e.g., kg product).

$Activity_c$ = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is vented to the properly functioning destruction unit (e.g., kg product).

DE = Demonstrated destruction efficiency of the destruction unit (weight fraction).

(G) For process vents from processes with multiple operating scenarios, use

equation 4 to this paragraph (c)(1)(iii)(G) to develop an adjusted process-vent-specific emission factor for each operating scenario whose emission calculation factor differs by less than 15 percent from the emission calculation factor of the operating scenario that is expected to have the largest emissions (or of another operating scenario for which emission testing is performed).

Equation 4 to Paragraph (c)(1)(iii)(G)

$$EF_{PVadj} = \frac{ECF_{UT}}{ECF_T} = * EF_{PV}$$

Where:

EF_{PVadj} = Adjusted process-vent-specific emission factor for an untested operating scenario.

ECF_{UT} = Emission calculation factor for the untested operating scenario developed under paragraph (c)(4) of this section.

ECF_T = Emission calculation for the tested operating scenario developed under paragraph (c)(4) of this section.

EF_{PV} = Process vent specific emission factor for the tested operating scenario.

(H) Sum the emissions of each controlled substance from all process vents in each operating scenario and all operating scenarios in the process for the year to estimate the total process vent emissions of each controlled substance from the process, using equation 5 to this paragraph (c)(1)(iii)(H).

Equation 5 to Paragraph (c)(1)(iii)(H)

$$E_{Ppi} = \sum_1^o \sum_1^v E_{PV}$$

Where:

E_{Ppi} = Mass of controlled substance p emitted from process vents for process i for the year (kg).

E_{PV} = Mass of controlled substance p emitted from process vent v from process i,

operating scenario j, for the year, considering destruction efficiency (kg).
 v = Number of process vents in process i, operating scenario j.
 o = Number of operating scenarios for process i.

(iv) *Process-vent-specific emission calculation factor method.* For each process vent within an operating scenario, determine controlled substances emissions by calculations and determine the process activity rate, such as the feed rate, production rate, or other process activity rate, associated with the emission rate.

(A) Each entity must calculate uncontrolled emissions of controlled substances by individual process vent, E_{PV} , by using measurements, by using calculations based on chemical engineering principles and chemical property data, or by conducting an engineering assessment. Use the procedures in paragraph (c)(1)(i)(A) or (B) of this section, except paragraph (c)(1)(i)(B)(3) of this section. The procedures in paragraphs (c)(1)(i)(A) and (B) of this section may be applied either to batch process vents or to continuous process vents. The uncontrolled emissions must be based on a typical batch or production rate under a defined operating scenario. The process activity rate associated with the uncontrolled emissions must be determined. The methods, data, and assumptions used to estimate emissions for each operating scenario must be selected to yield a best estimate (expected value) of emissions rather than an over- or underestimate of emissions for that operating scenario. All data, assumptions, and procedures used in the calculations or engineering assessment must be documented according to paragraph (f) of this section.

(B) Each entity must calculate a site-specific, process-vent-specific emission calculation factor for each process vent each operating scenario, and each controlled substance, in kg of controlled substance per activity rate (e.g., kg of feed or production) as applicable, using equation 6 to this paragraph (c)(1)(iv)(B).

Equation 6 to Paragraph (c)(1)(iv)(B)

$$ECF_{PV} = \frac{E_{PV}}{Activity_{Representative}}$$

Where:

ECF_{PV} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j (e.g., kg emitted/kg product).

E_{PV} = Average mass of controlled substance p emitted, based on calculations, from

process vent v from process i, operating scenario j, during the period or batch for which emissions were calculated, for either continuous or batch (kg emitted/hr for continuous, kg emitted/batch for batch).

Activity Representative = Process feed, process production, or other process activity rate corresponding to average mass of emissions based on calculations (e.g., kg product/hr for continuous, kg product/batch for batch).

(C) Each entity must calculate emissions of each controlled substance for the process vent (and for each operating scenario, as applicable) for the year by multiplying the process-vent-specific emission calculation factor by the total process activity, as applicable, for the year, using equation 7 to this paragraph (c)(1)(iv)(C).

Equation 7 to Paragraph (c)(1)(iv)(C)

$$E_{PV} = ECF_{PV} * Activity$$

Where:

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year (kg).

ECF_{PV} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j (kg emitted/activity) (e.g., kg emitted/kg product).

Activity = Process feed, process production, or other process activity for process i, operating scenario j, during the year.

(D) If the process vent is vented to a destruction unit, apply the demonstrated destruction efficiency of the device to the controlled substance emissions for the process vent (and operating scenario, as applicable), using equation 8 to this paragraph (c)(1)(iv)(D). Apply the destruction efficiency only to the portion of the process activity that is vented to the properly functioning destruction unit (i.e., controlled).

Equation 8 to Paragraph (c)(1)(iv)(D)

$$E_{PV} = ECF_{PV} * (Activity_u + Activity_c * (1 - DE))$$

Where:

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year considering destruction efficiency (kg).

ECF_{PV} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j (e.g., kg emitted/kg product).

Activity_U = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is not vented to the properly functioning destruction unit (e.g., kg product).

Activity_C = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is vented

to the properly functioning destruction unit (e.g., kg product).

DE = Demonstrated destruction efficiency of the destruction unit (weight fraction).

(E) Sum the emissions of each controlled substance from all process vents in each operating scenario and all operating scenarios in the process for the year to estimate the total process vent emissions of each controlled substance from the process, using equation 9 to this paragraph (c)(1)(iv)(E).

Equation 9 to Paragraph (c)(1)(iv)(E)

$$E_{Ppi} = \sum_1^o \sum_1^v E_{PV}$$

Where:

E_{Ppi} = Mass of controlled substance p emitted from process vents for process i for the year (kg).

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, considering destruction efficiency (kg).

v = Number of process vents in process i, operating scenario j.

o = Number of operating scenarios in process i.

(2) *Calculate emissions for equipment leaks (EL).* If activity is covered under paragraph (c)(1) of this section, each entity must calculate the emissions from pieces of equipment associated with processes covered under this section. If conducting monitoring of equipment in controlled substance service, monitoring must be conducted for those in light liquid and in gas and vapor service. If conducting monitoring of equipment in controlled substance service, the entity may exclude from monitoring each piece of equipment that is difficult-to-monitor, that is unsafe-to-monitor, that is insulated, or that is in heavy liquid service; the entity may exclude from monitoring each pump with dual mechanical seals, agitator with dual mechanical seals, pump with no external shaft, agitator with no external shaft; the entity may exclude from monitoring each pressure relief device in gas and vapor service with upstream rupture disk, each sampling connection system with closed-loop or closed-purge systems, and any pieces of equipment where leaks are routed through a closed vent system to a destruction unit. The entity must estimate emissions using another approach for those pieces of equipment excluded from monitoring. Equipment that is in controlled substance service for less than 300 hr/yr, equipment that is in vacuum service, pressure relief devices that are in light liquid service, and instrumentation systems are exempted from the requirements in this paragraph (c)(2).

(j) The emissions from equipment leaks must be calculated using any of the procedures in paragraphs (c)(2)(i)(A), (B), (C), or (D) of this section.

(A) *Use of Average Emission Factor Approach in EPA protocol for equipment leak emission estimates.* The emissions from equipment leaks may be calculated using the default Average Emission Factor Approach in EPA-453/R-95-017 (incorporated by reference, see § 82.27).

(B) *Use of Other Approaches in EPA protocol for equipment leak emission estimates in conjunction with EPA Method 21.* The emissions from equipment leaks may be calculated using one of the following methods in EPA-453/R-95-017 (incorporated by reference, see § 82.27): The Screening Ranges Approach; the EPA Correlation Approach; or the Unit-Specific Correlation Approach. If it is determined that EPA Method 21 in appendix A-7 to 40 CFR part 60 is appropriate for monitoring a controlled substance, and if the instrument is calibrated with a compound different from one or more of the controlled substances or surrogates to be measured, each entity must develop response factors for each controlled substance or for each surrogate to be measured using EPA Method 21. For each controlled substance or surrogate measured, the response factor must be less than 10. The response factor is the ratio of the known concentration of a controlled substance or surrogate to the observed meter reading when measured using an instrument calibrated with the reference compound.

(C) *Use of Other Approaches in EPA protocol for equipment leak emission estimates in conjunction with site-specific leak monitoring methods.* The emissions from equipment leaks may be calculated using one of the following methods in EPA-453/R-95-017 (incorporated by reference, see § 82.27): The Screening Ranges Approach; the EPA Correlation Approach; or the Unit-Specific Correlation Approach. Each entity may develop a site-specific leak monitoring method appropriate for monitoring controlled substances or surrogates to use along with these three approaches. The site-specific leak monitoring method must meet the requirements in paragraph (d)(5)(i) of this section.

(D) *Use of site-specific leak monitoring methods.* The emissions from equipment leaks may be calculated using a site-specific leak monitoring method. The site-specific leak monitoring method must meet the

requirements in paragraph (d)(5)(i) of this section.

(ii) Each entity must collect information on the number of each type of equipment, the service of each piece of equipment (gas, light liquid, heavy liquid), the concentration of each controlled substance in the stream, and the time period each piece of equipment was in service (e.g., hours per year). Depending on which approach followed, the entity may be required to collect information for equipment on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; or associated screening data and leak rate data (i.e., bagging) used to develop a unit-specific correlation.

(iii) Calculate and sum the emissions of each controlled substance in kilograms per year for equipment pieces for each process, $E_{EL,p}$, annually. Each entity must include and estimate emissions for types of equipment that are excluded from monitoring, including difficult-to-monitor, unsafe-to-monitor and insulated pieces of equipment, pieces of equipment in heavy liquid service, pumps with dual mechanical seals, agitators with dual mechanical seals, pumps with no external shaft, agitators with no external shaft, pressure relief devices in gas and vapor service with upstream rupture disk, sampling connection systems with closed-loop or closed purge systems, and pieces of equipment where leaks are routed through a closed vent system to a destruction unit.

(3) *Calculate total controlled substance emissions for each process and for production or transformation processes at the facility.* (i) Estimate annually the total mass of each controlled substance emitted from each process, including emissions from process vents in paragraphs (c)(1)(iii) and (iv) of this section, as appropriate, and from equipment leaks in paragraph (c)(2) of this section, using equation 10 to this paragraph (c)(3)(i).

Equation 10 to Paragraph (c)(3)(i)

$$E_i = E_{Ppi} + E_{ELpi}$$

Where:

E_i = Total mass of each controlled substance p emitted from process i, annual basis (kg/year).

E_{Ppi} = Mass of controlled substance p emitted from all process vents and all operating scenarios in process i, annually (kg/year, calculated in equation 5 or 9 to this section, as appropriate).

E_{ELpi} = Mass of controlled substance p emitted from equipment leaks for pieces

of equipment for process i, annually (kg/year, calculated in paragraph (c)(2)(iii) of this section).

(ii) Estimate annually the total mass of each controlled substance emitted at the facility from each applicable process listed in paragraph (b)(2) of this section using equation 11 to this paragraph (c)(3)(ii). Develop separate totals for each applicable process listed in paragraph (b)(2) of this section.

Equation 11 to Paragraph (c)(3)(ii)

$$E = \sum_{i=1}^z E_i$$

Where:

E = Total mass of each controlled substance p emitted from all processes listed in paragraphs (b)(2)(i) through (iv) of this section, as appropriate (kilograms).

E_i = Total mass of each controlled substance p emitted from each process listed in paragraphs (b)(2)(i) through (iv) of this section, annual basis (kg/year, calculated in equation 10 to paragraph (c)(3)(i) of this section).

z = Total number of processes listed in paragraphs (b)(2)(i) through (iv) of this section, as appropriate.

(4) *Mass balance method.* Before using the mass balance approach to estimate your controlled substance emissions from a process, you must ensure that the process and the equipment and methods used to measure the process meet either the error limits described in this paragraph (c)(4) and calculated under paragraph (c)(4)(i) of this section or the requirements specified in paragraph (d)(4)(viii) of this section. If you choose to calculate the error limits, you must estimate the absolute and relative errors associated with using the mass balance approach on that process using equations 12 through 15 to this section in conjunction with equations 16 through 21 to this section. You may use the mass-balance approach to estimate emissions from the process if this calculation results in an absolute error of less than or equal to one metric ton of controlled substance per year or a relative error of less than or equal to 10 percent of the estimated controlled substance emissions. If you do not meet either of the error limits or the requirements of paragraph (d)(4)(viii) of this section, you must use the emission factor approach detailed in paragraphs (c)(1) through (3) of this section to estimate emissions from the process.

(i) To perform the calculation, you must first calculate the absolute and relative errors associated with the quantities calculated using either equations 18 through 21 to this section

or equation 28 to paragraph (c)(4)(xv) of this section. Alternatively, you may estimate these errors based on the variability of previous process measurements (e.g., the variability of measurements of stream concentrations), provided these measurements are representative of the current process and current measurement devices and techniques. Once errors have been calculated for the quantities in these equations, those errors must be used to calculate the errors in equations 16 and 17 to this section. You may omit the errors associated with equations 22 through 24 to this section.

(A) Where the measured quantity is a mass, the error in the mass must be equated to the accuracy or precision (whichever is larger) of the flowmeter, scale, or combination of volumetric and density measurements at the flow rate or mass measured.

(B) Where the measured quantity is a concentration of a stream component, the error of the concentration must be equated to the accuracy or precision (whichever is larger) with which you estimate the mean concentration of that stream component, accounting for the variability of the process, the frequency of the measurements, and the accuracy or precision (whichever is larger) of the analytical technique used to measure the concentration at the concentration measured. If the variability of process measurements is used to estimate the error, this variability shall be assumed to account both for the variability of the process and the precision of the analytical technique. Use standard statistical techniques such as the student's t distribution to estimate the error of the mean of the concentration measurements as a function of process variability and frequency of measurement.

(C) Equation 12 to this paragraph (c)(4)(i)(C) provides the general formula for calculating the absolute errors of sums and differences where the sum, S, is the summation of variables measured, a, b, c, etc. (e.g., $S = a + b + c$).

Equation 12 to Paragraph (c)(4)(i)(C)

$$e_{SA} = [(a * e_a)^2 + (b * e_b)^2 + (c * e_c)^2]^{1/2}$$

Where:

e_{SA} = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.

e_a = Relative error of a, expressed as one half of a 95 percent confidence interval.

e_b = Relative error of b, expressed as one half of a 95 percent confidence interval.

e_c = Relative error of c, expressed as one half of a 95 percent confidence interval.

(D) Equation 13 to this paragraph (c)(4)(i)(D) provides the general formula

for calculating the relative errors of sums and differences.

Equation 13 to Paragraph (c)(4)(i)(D)

$$e_{SR} = \frac{e_{SA}}{(a + b + c)}$$

Where:

e_{SR} = Relative error of the sum, expressed as one half of a 95 percent confidence interval.

e_{SA} = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.

$a+b+c$ = Sum of the variables measured.

(E) Equation 14 to this paragraph (c)(4)(i)(E) provides the general formula for calculating the absolute errors of products (e.g., flow rates of controlled substances calculated as the product of the flow rate of the stream and the concentration of the controlled substance in the stream), where the product, P, is the result of multiplying the variables measured, a, b, c, etc. (e.g., $P = a * b * c$).

Equation 14 to Paragraph (c)(4)(i)(E)

$$e_{PA} = (a * b * c)(e_a^2 + e_b^2 + e_c^2)^{1/2}$$

Where:

e_{PA} = Absolute error of the product, expressed as one half of a 95 percent confidence interval.

e_a = Relative error of a, expressed as one half of a 95 percent confidence interval.

e_b = Relative error of b, expressed as one half of a 95 percent confidence interval.

e_c = Relative error of c, expressed as one half of a 95 percent confidence interval.

(F) Equation 15 to this paragraph (c)(4)(i)(F) provides the general formula for calculating the relative errors of products.

Equation 15 to Paragraph (c)(4)(i)(F)

$$e_{PR} = \frac{e_{PA}}{(a * b * c)}$$

Where:

e_{PR} = Relative error of the product, expressed as one half of a 95 percent confidence interval.

e_{PA} = Absolute error of the product, expressed as one half of a 95 percent confidence interval.

$a*b*c$ = Product of the variables measured.

(G) Calculate the absolute error of the controlled substance emissions estimate by performing a preliminary estimate of the annual controlled substance emissions of the process using the method in paragraph (c)(4)(i)(H) of this section. Multiply this result by the relative error calculated for the mass of halogen emitted from the process in equation 15 to paragraph (c)(4)(i)(F) of this section.

(H) To estimate the annual controlled substance emissions of the process for

use in the error estimate, apply the methods set forth in paragraphs (c)(4)(ii) through (vii) and (ix) through (xvi) of this section to representative process measurements. If these process measurements represent less than one year of typical process activity, adjust the estimated emissions to account for one year of typical process activity. To estimate the terms FERd, FEP, and FEBk for use in the error estimate for equations 22, 23, and 24 to this section, you must either use emission testing, monitoring of emitted streams, and/or engineering calculations or assessments.

(ii) The total mass of each controlled substance emitted annually from each controlled substance process must be estimated by using equation 16 to this paragraph (c)(4)(ii).

Equation 16 to Paragraph (c)(4)(ii)

$$E_{FCSf} = \sum_{t=1}^n (E_{Rp} + E_{Pp} + E_{Bp})$$

Where:

E_{Contp} = Total mass of each controlled substance p emitted annually from process i (metric tons).

$E_{Rp} \cdot F_{Contp}$ = Total mass of controlled substance reactant p emitted from production process i over the period t (metric tons, calculated in equation 22 to paragraph (c)(4)(ix) of this section).

$E_{Pp} \cdot F_{Contp}$ = Total mass of the controlled substance product p emitted from production process i over the period t (metric tons, calculated in equation 23 to paragraph (c)(4)(x) of this section).

$E_{Bp} \cdot F_{Contp}$ = Total mass of controlled substance byproduct p emitted from production process i over the period t (metric tons, calculated in equation 24 to paragraph (c)(4)(xi) of this section).

n = Number of concentration and flow measurement periods for the year.

(iii) The total mass of halogen emitted from process i over the period t must be estimated at least monthly by calculating the difference between the total mass of halogen in the reactant(s) (or inputs, for processes that do not involve a chemical reaction) and the total mass of halogen in the product (or outputs, for processes that do not involve a chemical reaction), accounting for the total mass of halogen in any destroyed or recaptured streams that contain reactants, products, or byproducts (or inputs or outputs). This calculation must be performed using equation 17 to this paragraph (c)(4)(iii). An element other than a halogen may be used in the mass-balance equation, provided the element occurs in all of the controlled substances fed into or generated by the process. In this case, the mass fractions of the element in the

reactants, products, and byproducts

must be calculated as appropriate for that element.

Equation 17 to Paragraph (c)(4)(iii)

$$E_H = \sum_1^v (R_D * MFH_{RD}) - P * MFH_P - F_D$$

Where:

E_H = Total mass of halogen emitted from process i over the period t (metric tons).

R_d = Total mass of the halogen-containing reactant d that is fed into process i over the period t (metric tons).

P = Total mass of the halogen-containing product produced by process i over the period t (metric tons).

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

F_D = Total mass of halogen in destroyed or recaptured streams from process i containing halogen-containing reactants, products, and byproducts over the period t, calculated in equation 18 to paragraph (c)(4)(iv) of this section.

v = Number of halogen-containing reactants fed into process i.

(iv) The mass of total halogen in destroyed or recaptured streams containing halogen-containing reactants, products, and byproducts must be estimated at least monthly using equation 18 to this paragraph (c)(4)(iv) unless you use the alternative approach provided in paragraph (c)(4)(xv) of this section.

Equation 18 to Paragraph (c)(4)(iv)

$$F_D = \sum_{j=1}^q P_j * MFH_P + \sum_{k=1}^u \left[\left(\sum_{j=1}^q B_{kj} + \sum_{l=1}^x B_{kl} \right) * MFH_{Bk} \right] + \sum_{d=1}^v \left(\sum_{j=1}^q R_{dj} * MFH_{Rd} \right)$$

Where:

F_D = Total mass of halogen in destroyed or recaptured streams from process i containing halogen-containing reactants, products, and byproducts over the period t.

P_j = Mass of the halogen-containing product removed from process i in stream j and destroyed over the period t (calculated in equation 19 or 20 to this section).

B_{kj} = Mass of halogen-containing byproduct k removed from process i in stream j and destroyed over the period t (calculated in equation 19 or 20 to this section).

B_{kl} = Mass of halogen-containing byproduct k removed from process i in stream l and recaptured over the period t.

R_{dj} = Mass of halogen-containing reactant d removed from process i in stream j and destroyed over the period t (calculated in equation 19 or 20 to this section).

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MFH_{Bk} = Mass fraction of halogen in byproduct k, calculated in equation 27 to paragraph (c)(4)(xiv) of this section.

q = Number of streams destroyed in process i.

x = Number of streams recaptured in process i.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

(v) The mass of each controlled substance removed from process i in stream j and destroyed over the period t (*i.e.*, P_j , B_{kj} , or R_{dj} , as applicable) must be estimated by applying the destruction efficiency of the device that

has been demonstrated for the controlled substance p to controlled substance f using equation 19 to this paragraph (c)(4)(v).

Equation 19 to Paragraph (c)(4)(v)

$$MF_{contpj} = DE_{contp} * C_{contrpj} * S_j$$

Where:

MF_{contpj} = Mass of controlled substance p removed from process i in stream j and destroyed over the period t. (This may be P_j , B_{kj} , or R_{dj} , as applicable.)

DE_{contp} = Destruction efficiency of the device that has been demonstrated for controlled substance p in stream j (fraction).

C_{contpj} = Concentration (mass fraction) of controlled substance p in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, C_{contpj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

(vi) The mass of each halogen-containing compound that is not a controlled substance and that is removed from process i in stream j and destroyed over the period t (*i.e.*, $P_{>j}$, B_{kj} , or $R_{>dj}$, as applicable) must be estimated using equation 20 to this paragraph (c)(4)(vi).

Equation 20 to Paragraph (c)(4)(vi)

$$M_{hcgj} = C_{HCgj} * S_j$$

Where:

M_{HCgj} = Mass of non-controlled substance halogen-containing compound g removed from process i in stream j and

destroyed over the period t. (This may be P_j , B_{kj} , or R_{dj} , as applicable.)

C_{HCgj} = Concentration (mass fraction) of non-controlled substance halogen-containing compound g in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, C_{HCgj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

(vii) The mass of halogen-containing byproduct k removed from process i in stream l and recaptured over the period t must be estimated using equation 21 to this paragraph (c)(4)(vii).

Equation 21 to Paragraph (c)(4)(vii)

$$B_{kl} = C_{Bkl} * S_l$$

Where:

B_{kl} = Mass of halogen-containing byproduct k removed from process i in stream l and recaptured over the period t (metric tons).

C_{Bkl} = Concentration (mass fraction) of halogen-containing byproduct k in stream l removed from process i and recaptured over the period t. If this concentration is only a trace concentration, C_{Bkl} is equal to zero.

S_l = Mass removed in stream l from process i and recaptured over the period t (metric tons).

(viii) To estimate the terms FER_d , FEP , and FEB_k for equations 22, 23, and 24 to this section, you must account for the total mass of halogen emitted, EF , estimated in equation 17 to paragraph (c)(4)(iii) of this section. These emission characterization measurements must meet the requirements in paragraph

(c)(4)(viii)(A), (B), or (C) of this section, as appropriate. The sum of the terms must equal 1. You must document the data and calculations that are used to apportion individual compounds and to estimate FER_d, FEP, and FEB_k. Exclude from your calculations the halogen included in FD. For example, exclude halogen-containing compounds that are not controlled substances and that result from the destruction of controlled substances by any destruction devices (e.g., the mass of HF created by combustion of a chlorofluorocarbon). However, include emissions of controlled substance that survive the destruction process.

(A) If the calculations under paragraph (b)(1)(viii) of this section, or any subsequent measurements and calculations under this subpart, indicate that the process emits 0.1 metric tons controlled substance or more, estimate the emissions from each process vent, considering controls, using the methods in paragraph (c)(1)(i) of this section. You must characterize the emissions of any process vent that emits 0.1 metric tons controlled substance or more as specified in paragraph (d)(4)(iv) of this section.

(B) For other vents, including vents from processes that emit less than 0.1 metric tons of controlled substance, you

must characterize emissions as specified in paragraph (d)(4)(v) of this section.

(C) For halogen emissions that are not accounted for by vent estimates, you must characterize emissions as specified in paragraph (d)(4)(vi) of this section.

(ix) The total mass of halogen-containing reactant d emitted must be estimated at least monthly based on the total halogen emitted and the fraction that consists of halogen-containing reactants using equation 22 to this paragraph (c)(4)(ix). If the halogen-containing reactant d is not a controlled substance, you may assume that FER_d is zero.

Equation 22 to Paragraph (c)(4)(ix)

$$E_{R-it} = \frac{FER_d * E_H}{(\sum_1^v FER_d * MFH_{Rd} + FEP * MFH_P + \sum_{k=1}^u FEB_k * MFH_{Bk})}$$

Where:

E_{R-it} = Total mass of halogen-containing reactant d that is emitted from process i over the period t (metric tons).

FER_d = The fraction of the mass emitted that consists of the halogen-containing reactant d.

E_H = Total mass of halogen emissions from process i over the period t (metric tons), calculated in equation 17 to paragraph (c)(4)(iii) of this section.

FEP = The fraction of the mass emitted that consists of the halogen-containing product.

FEB_k = The fraction of the mass emitted that consists of halogen-containing byproduct k.

MF_{F_{Rd}} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MF_{H_P} = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MF_{H_{Bk}} = Mass fraction of halogen in byproduct k, calculation in equation 27 to paragraph (c)(4)(xiv) of this section.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

(x) The total mass of halogen-containing product emitted must be estimated at least monthly based on the total halogen emitted and the fraction that consists of halogen-containing products using equation 23 to this paragraph (c)(4)(x). If the halogen-containing product is not a controlled substance, you may assume that FEP is zero.

Equation 23 to Paragraph (c)(4)(x)

$$E_{P-it} = \frac{FEP * E_H}{(\sum_1^v FER_d * MFH_{Rd} + FEP * MFH_P + \sum_{k=1}^u FEB_k * MFH_{Bk})}$$

Where:

E_{P-it} = Total mass of halogen-containing product emitted from process i over the period t (metric tons).

FEP = The fraction of the mass emitted that consists of the halogen-containing product.

E_H = Total mass of halogen emissions from process i over the period t (metric tons), calculated in equation 17 to paragraph (c)(4)(iii) of this section.

FER_d = The fraction of the mass emitted that consists of halogen-containing reactant d.

FEB_k = The fraction of the mass emitted that consists of halogen-containing byproduct k.

MF_{H_{Rd}} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MF_{H_P} = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MF_{H_{Bk}} = Mass fraction of halogen in byproduct k, calculation in equation 27 to paragraph (c)(4)(xiv) of this section.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

(xi) The total mass of halogen-containing byproduct k emitted must be estimated at least monthly based on the total halogen emitted and the fraction that consists of halogen-containing byproducts using equation 24 to this paragraph (c)(4)(xi). If halogen-containing byproduct k is not a controlled substance, you may assume that FEB_k is zero.

Equation 24 to Paragraph (c)(4)(xi)

$$E_{Bk-it} = \frac{FEB_k * E_H}{(\sum_1^v FER_d * MFH_{Rd} + FEP * MFH_P + \sum_{k=1}^u FEB_k * MFH_{Bk})}$$

Where:

E_{Bk-it} = Total mass of halogen-containing byproduct k emitted from process i over the period t (metric tons).

FEB_k = The fraction of the mass emitted that consists of halogen-containing byproduct k.

FER_d = The fraction of the mass emitted that consists of halogen-containing reactant d.

FEP = The fraction of the mass emitted that consists of the halogen-containing product.

E_H = Total mass of halogen emissions from process i over the period t (metric tons), calculated in equation 17 to paragraph (c)(4)(iii) of this section.

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MFH_{Bk} = Mass fraction of halogen in byproduct k, calculation in equation 27 to paragraph (c)(4)(xiv) of this section.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

(xii) The mass fraction of halogen in reactant d must be estimated using equation 25 to this paragraph (c)(4)(xii).

Equation 25 to Paragraph (c)(4)(xii)

$$MFH_{Rd} = MH_{Rd} * \frac{AW_H}{MW_{Rd}}$$

Where:

MFH_{Rd} = Mass fraction of halogen in reactant d (fraction).

MHR_d = Moles halogen per mole of reactant d.

AWH = Atomic weight of halogen.

MWR_d = Molecular weight of reactant d.

(xiii) The mass fraction of halogen in the product must be estimated using equation 26 to this paragraph (c)(4)(xiii).

Equation 26 to Paragraph (c)(4)(xiii)

$$MFH_P = MH_P * \frac{AW_F}{MW_P}$$

Where:

MFH_P = Mass fraction of halogen in the product (fraction).

MH_P = Moles halogen per mole of product.

AW_H = Atomic weight of halogen.

MW_P = Molecular weight of the product produced.

(xiv) The mass fraction of each applicable halogen in byproduct k must be estimated using equation 27 to this paragraph (c)(4)(xiv).

$$F_D = \sum_{j=1}^q DE_{avgj} * c_{THj} * S_j + \sum_{l=1}^x c_{THl} * S_l$$

Where:

F_D = Total mass of halogen in destroyed or recaptured streams from process i containing halogen-containing reactants, products, and byproducts over the period t.

DE_{avgj} = Weighted average destruction efficiency of the destruction device for the halogen-containing compounds identified in destroyed stream j under paragraphs (d)(4)(iv)(B) and (d)(4)(v)(B) of this section (calculated in equation 28 to this paragraph (c)(4)(xv)) (fraction).

c_{THj} = Concentration (mass fraction) of total halogen in stream j removed from

process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, c_{THj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

c_{THl} = Concentration (mass fraction) of total halogen in stream l removed from process i and recaptured over the period t. If this concentration is only a trace concentration, c_{Bkl} is equal to zero.

S_l = Mass removed in stream l from process i and recaptured over the period t.

Equation 27 to Paragraph (c)(4)(xiv)

$$MFH_{Bk} = MH_{Bk} * \frac{AW_F}{MW_{Bk}}$$

Where:

MFH_{Bk} = Mass fraction of halogen in the product (fraction).

MHB_k = Moles halogen per mole of byproduct k.

AWH = Atomic weight of halogen.

MWB_k = Molecular weight of byproduct k.

(xv) As an alternative to using equation 18 to paragraph (c)(4)(iv) of this section as provided in paragraph (b)(4) of this section, you may estimate at least monthly the total mass of halogen in destroyed or recaptured streams containing halogen-containing compounds (including all halogen-containing reactants, products, and byproducts) using equation 28 to this paragraph (c)(4)(xv).

Equation 28 to Paragraph (c)(4)(xv)

q = Number of streams destroyed in process i.
x = Number of streams recaptured in process i.

(xvi) For purposes of equation 28 to paragraph (c)(4)(xv) of this section, calculate the weighted average destruction efficiency applicable to a destroyed stream using equation 29 to this paragraph (c)(4)(xvi).

Equation 29 to Paragraph (c)(4)(xvi)

$$DE_{avgj} = \frac{\sum_{p=1}^w DE_{Contp} * c_{Contpj} * S_j * MFH_{Contp} + \sum_{g=1}^y c_{HCg} * S_j * MFH_g}{\sum_{p=1}^w c_{Contpj} * S_j * MFH_{Contp} + \sum_{g=1}^y c_{HCg} * S_j * MFH_g}$$

Where:

DE_{avgj} = Weighted average destruction efficiency of the destruction device for the halogen-containing compounds identified in destroyed stream j under paragraph (d)(4)(iv)(B) or (d)(4)(v)(B) of this section, as appropriate.

DE_{Contp} = Destruction efficiency of the device that has been demonstrated for controlled substance p in stream j (fraction).

c_{Contpj} = Concentration (mass fraction) of controlled substance p in stream j removed from process i and fed into the destruction device over the period t. If

this concentration is only a trace concentration, c_{Contpj} is equal to zero.

c_{HCg} = Concentration (mass fraction) of non-controlled substance halogen-containing compound g in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, c_{HCg} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

MFH_{Contp} = Mass fraction of halogen in controlled substance p, calculated in

equation 25, 26, or 27 to this section, as appropriate.

MFH_{HCg} = Mass fraction of halogen in non-controlled substance halogen-containing compound g, calculated in equation 25, 26, or 27 to this section, as appropriate.

w = Number of controlled substances in destroyed stream j.

y = Number of non-controlled substance halogen-containing compounds in destroyed stream j.

(5) Calculate controlled substance emissions from destruction of controlled substances. Estimate annually the total

mass of controlled substances emitted annually from destruction of controlled substances using equation 30 to this paragraph (c)(5):

Equation 30 to Paragraph (c)(5)

$$E_D = RE_D * (1 - DE)$$

Where:

Where:

$DE_{Effective}$ = Effective destruction efficiency for process i (fraction).

E_{PVp} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, calculated in equation 3, 7, or 8 to this section (kg).

ECF_{PV-Uj} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j, as used in equation 7 or 8 to this section (kg emitted/activity) (e.g., kg emitted/kg product), denoted as “ ECF_{PV} ” in those equations.

EF_{PV-Uj} = Emission factor (uncontrolled) for controlled substance p emitted from process vent v during process i, operating scenario j, as used in equation 3 to paragraph (c)(1)(iii)(F) of this section (kg emitted/activity) (e.g., kg emitted/kg product), denoted as “ EF_{PV-U} ” in that equation.

$Activity_U$ = Total process feed, process production, or other process activity for process i, operating scenario j during the year, for which the process vent is not vented to the properly functioning destruction unit (i.e., uncontrolled).

$Activity_C$ = Total process feed, process production, or other process activity for process i, operating scenario j during the year, for which emissions are vented to the properly functioning destruction unit (i.e., controlled).

o = Number of operating scenarios for process i.

v = Number of process vents in process i, operating scenario j.

w = Number of controlled substances emitted from the process.

(d) *Monitoring and QA/QC requirements*—(1) *Initial scoping speciation to identify controlled substances from transformation processes*. Each entity that transforms controlled substances must conduct an initial scoping speciation to identify all controlled substances that may be generated or emitted from transformation processes that are subject to this section. The entity is not required to quantify emissions under this initial scoping speciation. Only controlled substance products and byproducts that occur in greater than trace concentrations in at least one

E_D = The mass of controlled substances emitted annually from destruction of controlled substances (kilograms).

RE_D = The mass of controlled substances that are fed annually into the destruction unit (kilograms).

DE = Destruction efficiency of the destruction unit (fraction).

(6) *Effective destruction efficiency for each process*. If using the emission

factor or emission calculation factor method to calculate emissions from the process, use equation 31 to this paragraph (c)(6) to calculate the effective destruction efficiency for the process, including each process vent:

Equation 31 to Paragraph (c)(6)

$$DE_{Effective} = 1 - \frac{\sum_1^w (\sum_1^o \sum_1^v E_{PVp})}{\sum_1^w (\sum_1^o \sum_1^v ECF_{PV-Uj} * (Activity_U + Activity_C)) + \sum_1^w (\sum_1^o \sum_1^v EF_{PV-Uj} * (Activity_U + Activity_C))}$$

stream must be identified under this paragraph (d)(1).

(i) *Procedure*. To conduct the scoping speciation, select the stream(s) (including process streams or destroyed streams) or process vent(s) that would be expected to individually or collectively contain all of the controlled substance byproducts of the process at their maximum concentrations and sample and analyze the contents of these selected streams or process vents. For example, if controlled substance byproducts are separated into one low-boiling-point and one high-boiling-point stream, sample and analyze both of these streams. Alternatively, each entity may sample and analyze streams where controlled substance byproducts occur at less than their maximum concentrations, but the entity must ensure that the sensitivity of the analysis is sufficient to compensate for the expected difference in concentration. For example, if the entity samples and analyzes streams where controlled substance byproducts are expected to occur at one half their maximum concentrations elsewhere in the process, that entity must ensure that the sensitivity of the analysis is sufficient to detect controlled substance byproducts that occur at concentrations of 0.05 percent or higher. The entity does not have to sample and analyze every stream or process vent, i.e., the entity does not have to sample and analyze a stream or process vent that contains only controlled substances that are contained in other streams or process vents that are being sampled and analyzed. Sampling and analysis must be conducted according to the procedures in paragraph (d)(5) of this section.

(ii) *Previous measurements*. If testing of streams (including process streams or destroyed streams) or process vents were conducted less than 5 years before November 12, 2024, and the testing meets the requirements in paragraph (d)(1)(i) of this section, each entity may

use the previous testing to satisfy this requirement.

(2) *Emission factor testing*. If controlled substance emissions are determined using the site-specific process-vent-specific emission factor, each entity must meet the requirements in paragraphs (d)(2)(i) through (vii) of this section.

(i) *Process vent testing*. Conduct an emissions test that is based on representative performance of the process or operating scenario(s) of the process, as applicable. For process vents for which each entity performed an initial scoping speciation, include in the emission test any controlled substance that was identified in the initial scoping speciation. For process vents for which the entity did not perform an initial scoping speciation, include in the emission test any controlled substance that occurs in more than trace concentrations in the vent stream or, where a destruction unit is used, in the inlet to the destruction unit. The entity may include startup and shutdown events if the testing is sufficiently long or comprehensive to ensure that such events are not overrepresented in the emission factor. Malfunction events must not be included in the testing. If the entity does not detect a controlled substance that was identified in the scoping speciation or that occurs in more than trace concentrations in the vent stream or in the inlet to the destruction unit, assume that controlled substance was emitted from the process vent, or from the destruction unit, at a concentration of one third of the detection limit.

(ii) *Number of runs*. For continuous processes, sample the process vent for a minimum of three runs of 1 hour each. If the relative standard deviation (RSD) of the emission factor calculated based on the first three runs is greater than or equal to 0.15 for the emission factor, continue to sample the process vent for an additional three runs of 1 hour each.

(iii) *Process activity measurements*. Determine the mass rate of process feed, process production, or other process

activity as applicable during the test using flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ± 1 percent of full scale or better. These devices may be the same plant instruments or procedures that are used for accounting purposes (such as weigh hoppers, belt weigh feeders, combination of volume measurements and bulk density, etc.) if these devices or procedures meet the requirement. For monitoring ongoing process activity, use flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ± 1 percent of full scale or better.

(iv) *Sample each process.* If process vents from separate processes are manifolded together to a common vent or to a common destruction unit, each entity must follow paragraph (d)(2)(iv)(A), (B), or (C) of this section.

(A) Each entity may sample emissions from each process in the ducts upstream from the point where the emissions are combined.

(B) Each entity may sample in the common duct or at the outlet of the destruction unit when only one process is operating.

(C) Each entity may sample the combined emissions and use engineering calculations and assessments as specified in paragraph (c)(1)(iv) of this section to allocate the emissions to each manifolded process vent, provided the sum of the calculated controlled substance emissions across the individual process vents is within 20 percent of the total controlled substance emissions measured during the manifolded testing.

(v) *Emission test results.* The results of an emission test must include the analysis of samples, number of test runs, the results of the RSD analysis, the analytical method used, determination of emissions, the process activity, and raw data and must identify the process, the operating scenario, the process vents tested, and the controlled substances that were included in the test. The emissions test report must contain all information and data used to derive the process-vent-specific emission factor, as well as key process conditions during the test. Key process conditions include those that are normally monitored for process control purposes and may include but are not limited to yields, pressures, temperatures, etc. (e.g., of reactor vessels, distillation columns).

(vi) *Emissions testing frequency.* Each entity must conduct emissions testing to develop the process-vent-specific emission factor under paragraph (d)(2)(vi)(A) or (B) of this section, whichever occurs first:

(A) *5-year revision.* Conduct an emissions test every 5 years. In the calculations under paragraph (c) of this section, apply the revised process-vent-specific emission factor to the process activity that occurs after the revision.

(B) *Operating scenario change that affects the emission factor.* For planned operating scenario changes, each entity must estimate and compare the emission calculation factors for the changed operating scenario and for the original operating scenario whose process vent specific emission factor was measured. Use the calculation methods in paragraph (c)(1)(iv) of this section. If the emission calculation factor for the changed operating scenario is 15 percent or more different from the emission calculation factor for the previous operating scenario (this includes the cumulative change in the emission calculation factor since the most recent emissions test), the entity must conduct an emissions test to update the process-vent-specific emission factor, unless the difference between the operating scenarios is solely due to the application of a destruction unit to emissions under the changed operating scenario. Conduct the test before February 14 of the calendar year that immediately follows the change. In the calculations under paragraph (c) of this section, apply the revised process-vent-specific emission factor to the process activity that occurs after the operating scenario change.

(vii) *Previous measurements.* If an emissions test was conducted less than 5 years before November 12, 2024, and the emissions testing meets the requirements in paragraphs (d)(2)(i) through (vii) of this section, the entity may use the previous emissions testing to develop process-vent-specific emission factors. For purposes of paragraph (d)(2)(vi)(A) of this section, the date of the previous emissions test rather than November 12, 2024, shall constitute the beginning of the 5-year re-measurement cycle.

(3) *Emission calculation factor monitoring.* If controlled substance emissions were determined using the site-specific process-vent-specific emission calculation factor, each entity must meet the requirements in paragraphs (d)(3)(i) through (iv) of this section.

(i) *Operating scenario.* Perform the emissions calculation for the process vent based on representative performance of the operating scenario of the process. If more than one operating scenario applies to the process that contains the subject process vent, you must conduct a separate emissions calculation for operation under each

operating scenario. For each continuous process vent that contains more than trace concentrations of any controlled substance and for each batch process vent that contains more than trace concentrations of any controlled substance, develop the process-vent-specific emission calculation factor for each operating scenario. For continuous process vents, determine the emissions based on the process activity for the representative performance of the operating scenario. For batch process vents, determine emissions based on the process activity for each typical batch operating scenario.

(ii) *Process activity measurements.* Use flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ± 1 percent of full scale or better for monitoring ongoing process activity.

(iii) *Emission calculation results.* The emission calculation must be documented by identifying the process, the operating scenario, and the process vent(s). The documentation must contain the information and data used to calculate the process-vent-specific emission calculation factor.

(iv) *Operating scenario change that affects the emission calculation factor.* For planned operating scenario changes that are expected to change the process-vent-specific emission calculation factor, each entity must conduct an emissions calculation to update the process-vent-specific emission calculation factor. In the calculations under paragraph (c) of this section, apply the revised emission calculation factor to the process activity that occurs after the operating scenario change.

(v) *Previous calculations.* If an emissions calculation was performed for the process vent and operating scenario less than 5 years before November 12, 2024, and the emissions calculation meets the requirements in paragraphs (c)(1)(iv)(A) and (B) of this section and in paragraphs (d)(3)(i) through (iv) of this section, each entity may use the previous calculation to develop the site-specific process-vent-specific emission calculation factor.

(4) *Mass balance monitoring.* If you determine controlled substance emissions from any process using the mass balance method under paragraph (c)(4) of this section, you must estimate the total mass of each controlled substance emitted from that process at least monthly. Only streams that contain greater than trace concentrations of halogen-containing reactants, products, or byproducts must be monitored under this paragraph (d)(4).

(i) *Mass measurements.* Measure the following masses on a monthly or more

frequent basis using flowmeters, weigh scales, or a combination of volumetric and density measurements with accuracies and precisions that allow the facility to meet the error criteria in paragraph (c)(4)(i) of this section:

(A) Total mass of each halogen-containing product produced. Account for any used halogen-containing product added into the production process upstream of the output measurement as directed at §§ 98.413(b) and 98.414(b) of this chapter.

(B) Total mass of each halogen-containing reactant fed into the process.

(C) The mass removed from the process in each stream fed into the destruction device.

(D) The mass removed from the process in each recaptured stream.

(ii) *Concentration measurements for use with paragraph (c)(4)(iv) of this section.* If you use paragraph (c)(4)(iv) of this section to estimate the mass of halogen in destroyed or recaptured streams, measure the following concentrations at least once each calendar month during which the process is operating, on a schedule to ensure that the measurements are representative of the full range of process conditions (e.g., catalyst age). Measure more frequently if this is necessary to meet the error criteria in paragraph (c)(4)(i) of this section. Use equipment and methods (e.g., gas chromatography) that comply with paragraph (d)(5) of this section and that have an accuracy and precision that allow the facility to meet the error criteria in paragraph (c)(4)(i) of this section. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(ii).

(A) The concentration (mass fraction) of the halogen-containing product in each stream that is fed into the destruction device.

(B) The concentration (mass fraction) of each halogen-containing byproduct in each stream that is fed into the destruction device.

(C) The concentration (mass fraction) of each halogen-containing reactant in each stream that is fed into the destruction device.

(D) The concentration (mass fraction) of each halogen-containing byproduct in each stream that is recaptured (C_{Bki}).

(iii) *Concentration measurements for use with paragraph (c)(4)(xv) of this section.* If you use paragraph (c)(4)(xv) of this section to estimate the mass of halogen in destroyed or recaptured streams, measure the concentrations listed in paragraphs (d)(4)(iii)(A) and (B) of this section at least once each

calendar month during which the process is operating, on a schedule to ensure that the measurements are representative of the full range of process conditions (e.g., catalyst age). Measure more frequently if this is necessary to meet the error criteria in paragraph (c)(4)(i) of this section. Use equipment and methods (e.g., gas chromatography) that comply with paragraph (d)(5) of this section and that have an accuracy and precision that allow the facility to meet the error criteria in paragraph (c)(4)(i) of this section. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(iii).

(A) The concentration (mass fraction) of total halogen in each stream that is fed into the destruction device.

(B) The concentration (mass fraction) of total halogen in each stream that is recaptured.

(iv) *Emissions characterization: process vents emitting 0.1 metric tons or more.* To characterize emissions from any process vent emitting 0.1 metric tons of controlled substances or more, comply with paragraphs (d)(4)(iv)(A) through (E) of this section, as appropriate. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(iv).

(A) *Uncontrolled emissions.* If emissions from the process vent are not routed through a destruction device, sample and analyze emissions at the process vent or stack or sample and analyze emitted streams before the process vent. If the process has more than one operating scenario, you must either perform the emission characterization for each operating scenario or perform the emission characterization for the operating scenario that is expected to have the largest emissions and adjust the emission characterization for other scenarios using engineering calculations and assessments as specified in paragraph (c)(1)(iv) of this section. To perform the characterization, take three samples under conditions that are representative for the operating scenario. Measure the concentration of each halogen-containing compound in each sample. Use equipment and methods that comply with paragraph (d)(5) of this section. Calculate the average concentration of each halogen-containing compound across all three samples.

(B) *Controlled emissions using paragraph (c)(4)(xv) of this section.* If you use paragraph (c)(4)(xv) of this

section to estimate the total mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize emissions as specified in paragraph (d)(4)(iv)(A) of this section before the destruction device. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.

(C) *Controlled emissions using paragraph (c)(4)(iv) of this section.* If you use paragraph (c)(4)(iv) of this section to estimate the mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize the process vent's emissions monthly (or more frequently) using the monthly (or more frequent) measurements under paragraphs (d)(4)(i)(C) and (d)(4)(ii)(A) through (C) of this section. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.

(D) *Emissions characterization frequency.* You must repeat emission characterizations performed under paragraphs (d)(4)(iv)(A) and (B) of this section under paragraph (d)(4)(iv)(D)(1) or (2) of this section, whichever occurs first:

(1) *5-year revision.* Repeat the emission characterization every 5 years. In the calculations under paragraph (c) of this section, apply the revised emission characterization to the process activity that occurs after the revision.

(2) *Operating scenario change that affects the emission characterization.* For planned operating scenario changes, you must estimate and compare the emission calculation factors for the changed operating scenario and for the original operating scenario whose process vent specific emission factor was measured. Use the engineering calculations and assessments specified in paragraph (c)(1)(iv) of this section. If the share of total halogen-containing compound emissions represented by any controlled substance changes under the changed operating scenario by 15 percent or more of the total, relative to the previous operating scenario (this includes the cumulative change in the emission calculation factor since the last emissions test), you must repeat the emission characterization. Perform the emission characterization before

February 14 of the year that immediately follows the change. In the calculations under paragraph (c) of this section, apply the revised emission characterization to the process activity that occurs after the operating scenario change.

(E) *Subsequent measurements.* If a process vent with controlled substance emissions less than 0.1 metric tons, per paragraph (c)(1)(ii) of this section, is later found to have controlled substance emissions of 0.1 metric tons or greater, you must perform an emission characterization under this paragraph (d)(4)(iv)(E) during the following year.

(v) *Emissions characterization: process vents emitting less than 0.1 metric tons.* To characterize emissions from any process vent emitting less than 0.1 metric tons, comply with paragraphs (d)(4)(v)(A) and (B) of this section, as appropriate. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(v).

(A) *Uncontrolled emissions.* If emissions from the process vent are not routed through a destruction device, emission measurements must consist of sampling and analysis of emissions at the process vent or stack, sampling and analysis of emitted streams before the process vent, previous test results, provided the tests are representative of current operating conditions of the process, or bench-scale or pilot-scale test data representative of the process operating conditions.

(B) *Controlled emissions using paragraph (c)(4)(xv) of this section.* If you use paragraph (c)(4)(xv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize emissions as specified in paragraph (d)(4)(v)(A) of this section before the destruction device. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.

(C) *Controlled emissions using paragraph (c)(4)(iv) of this section.* If you use paragraph (c)(4)(iv) of this section to estimate the mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize the process vent's emissions monthly (or more frequently) using the monthly (or more frequent) measurements under paragraphs

(d)(4)(i)(C) and (d)(4)(ii)(A) through (C) of this section. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.

(vi) *Emissions characterization: emissions not accounted for by process vent estimates.* Calculate the weighted average emission characterization across the process vents before any destruction devices. Apply the weighted average emission characterization for all the process vents to any halogen emissions that are not accounted for by process vent estimates.

(vii) *Impurities in reactants.* If any halogen-containing impurity is fed into a process along with a reactant (or other input) in greater than trace concentrations, this impurity shall be monitored under this section and included in the calculations under paragraph (c) of this section in the same manner as reactants fed into the process, fed into the destruction device, recaptured, or emitted, except the concentration of the impurity in the mass fed into the process shall be measured, and the mass of the impurity fed into the process shall be calculated as the product of the concentration of the impurity and the mass fed into the process. The mass of the reactant fed into the process may be reduced to account for the mass of the impurity.

(viii) *Alternative to error calculation.* As an alternative to calculating the relative and absolute errors associated with the estimate of emissions under this paragraph (d)(4), you may comply with the precision, accuracy, and measurement and calculation frequency requirements of paragraph (d)(4)(viii)(A) through (C) of this section.

(A) *Mass measurements.* Measure the masses specified in paragraph (d)(4)(i) of this section using flowmeters, weigh scales, or a combination of volumetric and density measurements with accuracies and precisions of ± 0.2 percent of full scale or better.

(B) *Concentration measurements.* Measure the concentrations specified in paragraph (d)(4)(ii) or (iii) of this section, as applicable, using analytical methods with accuracies and precisions of ± 10 percent or better.

(C) *Measurement and calculation frequency.* Perform the mass measurements specified in paragraph (d)(4)(i) of this section and the concentration measurements specified in paragraph (d)(4)(ii) or (iii) of this section, as applicable, at least weekly, and calculate emissions at least weekly.

(5) *Emission and stream testing, including analytical methods.* Select and document testing and analytical methods as follows:

(i) *Sampling and mass measurement for emission testing.* For emission testing in process vents or at the stack, use methods for sampling, measuring volumetric flow rates, non-controlled substance gas analysis, and measuring stack gas moisture that have been validated using a scientifically sound validation protocol.

(A) *Sample and velocity traverses.* Acceptable methods include but are not limited to EPA Method 1 or 1A in appendix A-1 to 40 CFR part 60.

(B) *Velocity and volumetric flow rates.* Acceptable methods include but are not limited to EPA Method 2, 2A, 2B, 2C, 2D, 2F, or 2G in appendix A-1 to 40 CFR part 60. Alternatives that may be used for determining flow rates include Other Test Method 24 (incorporated by reference, see § 82.27) and ALT-012 (incorporated by reference, see § 82.27).

(C) *Non-controlled substance gas analysis.* Acceptable methods include but are not limited to EPA Method 3, 3A, or 3B in appendix A-1 to 40 CFR part 60.

(D) *Stack gas moisture.* Acceptable methods include but are not limited to EPA Method 4 in appendix A-1 to 40 CFR part 60.

(ii) *Analytical methods.* Use a quality-assured analytical measurement technology capable of detecting the analyte of interest at the concentration of interest and use a sampling and analytical procedure validated with the analyte of interest at the concentration of interest. Where calibration standards for the analyte are not available, a chemically similar surrogate may be used. Acceptable analytical measurement technologies include but are not limited to gas chromatography (GC) with an appropriate detector, infrared (IR), Fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR). Acceptable methods for determining controlled substances include EPA Method 18 in appendix A-1 to 40 CFR part 60, EPA Method 320 in appendix A to 40 CFR part 63, EPA 430-R-10-003 (incorporated by reference, see § 82.27), ASTM D6348-03 (incorporated by reference, see § 82.27), or other analytical methods validated using EPA Method 301 at appendix A to 40 CFR part 63. The validation protocol may include analytical technology manufacturer specifications or recommendations.

(iii) *Documentation in the monitoring plan.* Describe the sampling, measurement, and analytical method(s) used under paragraphs (d)(5)(i) and (ii)

of this section in the monitoring plan. Identify the methods used to obtain the samples and measurements listed under paragraphs (d)(5)(i)(A) through (D) of this section. At a minimum, include in the description of the analytical method a description of the analytical measurement equipment and procedures, quantitative estimates of the method's accuracy and precision for the analytes of interest at the concentrations of interest, as well as a description of how these accuracies and precisions were estimated, including the validation protocol used.

(6) *Emission monitoring for pieces of equipment.* If conducting a site-specific leak detection method or monitoring approach for pieces of equipment, each entity must follow paragraph (d)(6)(i) or (ii) of this section and follow paragraph (d)(6)(iii) of this section.

(i) *Site-specific leak monitoring approach.* Each entity may develop a site-specific leak monitoring approach. The entity must validate the leak monitoring method and describe the method and the validation in the monitoring plan. To validate the site-specific method, the entity may, for example, release a known rate of the controlled substances or surrogates of interest, or may compare the results of the site-specific method to those of a method that has been validated for the controlled substances or surrogates of interest. In the description of the leak detection method and its validation, include a detailed description of the method, including the procedures and equipment used and any sampling strategies. Also include the rationale behind the method, including why the method is expected to result in an unbiased estimate of emissions from equipment leaks. If the method is based on methods that are used to detect or quantify leaks or other emissions in other regulations, standards, or guidelines, identify and describe the regulations, standards, or guidelines and why their methods are applicable to emissions of controlled substances or surrogates from leaks. Account for possible sources of error in the method, *e.g.*, instrument detection limits, measurement biases, and sampling biases. Describe validation efforts, including but not limited to any comparisons against standard leaks or concentrations, any comparisons against other methods, and their results. If using the Screening Ranges Approach, the EPA Correlation Approach, or the Unit-Specific Correlation Approach with a monitoring instrument that does not meet all of the specifications in EPA Method 21 in appendix A-7 to 40 CFR part 60, then explain how and why the

monitoring instrument, as used at the facility, would nevertheless be expected to accurately detect and quantify emissions of controlled substances or surrogates from process equipment, and describe how accuracy was verified. For all methods, provide a quantitative estimate of the accuracy and precision of the method.

(ii) *EPA Method 21 monitoring.* If it is determined that EPA Method 21 in appendix A-7 to 40 CFR part 60 is appropriate for monitoring a controlled substance, conduct the screening value concentration measurements using EPA Method 21 to determine the screening range data or the actual screening value data for the Screening Ranges Approach, EPA Correlation Approach, or the Unit-Specific Correlation Approach. For the one-time testing to develop the Unit-Specific Correlation equations in EPA-453/R-95-017 (incorporated by reference, see § 82.27), conduct the screening value concentration measurements using EPA Method 21 and the bagging procedures to measure mass emissions. Concentration measurements of bagged samples must be conducted using gas chromatography following analytical procedures in EPA Method 18 in appendix A-1 to 40 CFR part 60 or other method according to this paragraph (d)(6). Use methane or other appropriate compound as the calibration gas.

(iii) *Frequency of measurement and sampling.* If estimating emissions based on monitoring of equipment, each entity must conduct monitoring at least annually. Sample at least one-third of equipment annually (except for equipment that is unsafe-to-monitor, difficult-to-monitor, insulated, or in heavy liquid service, pumps with dual mechanical seals, agitators with dual mechanical seals, pumps with no external shaft, agitators with no external shaft, pressure relief devices in gas and vapor service with an upstream rupture disk, sampling connection systems with closed-loop or closed purge systems, and pieces of equipment whose leaks are routed through a closed vent system to a destruction unit), changing the sample each year such that at the end of three years, all equipment in the process (that is not subject to the above-listed exceptions) has been monitored. If estimating emissions based on a sample of the equipment in the process, ensure that the sample is representative of the equipment in the process. If there are multiple processes that have similar types of equipment in similar service, and that perform activities on similar controlled substances (in terms of chemical composition, molecular weight, and vapor pressure) at similar

pressures and concentrations, then the entity may annually sample all of the equipment in one third of these processes rather than one third of the equipment in each process.

(7) *Destruction unit performance testing.* If venting or otherwise feeding controlled substances into a destruction unit and apply the destruction efficiency of the device to one or more controlled substances in paragraph (c) of this section, each entity must conduct emissions testing to determine the destruction efficiency for each controlled substance to which the destruction efficiency was applied. The entity must either determine the destruction efficiency for the most-difficult-to-destroy controlled substance fed into the device (or a surrogate that is still more difficult to destroy) and apply that destruction efficiency to all the controlled substances fed into the device or alternatively determine different destruction efficiencies for different groups of controlled substances using the most-difficult-to-destroy controlled substance of each group (or a surrogate that is still more difficult to destroy).

(i) *Destruction efficiency testing.* Each entity must sample the inlet and outlet of the destruction unit for a minimum of three runs of 1 hour each to determine the destruction efficiency. The entity must conduct the emissions testing using the methods in paragraph (d)(5) of this section. To determine the destruction efficiency, emission testing must be conducted when operating at high loads reasonably expected to occur (*i.e.*, representative of high total controlled substance load that will be sent to the device) and when destroying the most-difficult-to-destroy controlled substance (or a surrogate that is still more difficult to destroy) that is fed into the device from the processes subject to this section or that belongs to the group of controlled substances for which destruction efficiency is to be established. If the outlet concentration of a controlled substance that is fed into the device is below the detection limit of the method, the entity may use an outlet concentration of one-third the detection limit to estimate the destruction efficiency.

(A) For all other controlled substances that are vented to the destruction unit in any stream in more than trace concentrations, each entity must test and determine the destruction efficiency achieved for the most-difficult-to-destroy controlled substance or surrogate vented to the destruction unit. Examples of acceptable surrogates include the Class 1 compounds (ranked 1 through 34) in Appendix D, Table D-

1 of "Guidance on Setting Permit Conditions and Reporting Trial Burn Results; Volume II of the Hazardous Waste Incineration Guidance Series," January 1989, EPA Publication EPA 625/6-89/019. A copy of this publication can be obtained by contacting the Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460, (202) 272-0167, <https://www.epa.gov>.

(B) [Reserved]

(ii) *Destruction efficiency testing frequency.* Each entity must conduct emissions testing to determine the destruction efficiency as provided in paragraph (d)(7)(ii)(A) or (B) of this section, whichever occurs first:

(A) *Conduct an emissions test every 5 years.* In the calculations under paragraph (c) of this section, apply the updated destruction efficiency to the destruction that occurs after the test.

(B) *Destruction unit changes that affect the destruction efficiency.* If making a change to the destruction unit that would be expected to affect the destruction efficiency, each entity must conduct an emissions test to update the destruction efficiency. Conduct the test before February 14 of the year that immediately follows the change. In the calculations under paragraph (c) of this section, apply the updated destruction efficiency to the destruction that occurs after the change to the device.

(iii) *Previous testing.* If an emissions test was conducted within the 5 years prior to November 12, 2024, and the emissions testing meets the requirements in paragraph (d)(7)(i) of this section, each entity may use the destruction efficiency determined during this previous emissions testing. For purposes of paragraph (d)(7)(ii)(A) of this section, the date of the previous emissions test rather than November 12, 2024, shall constitute the beginning of the 5-year re-measurement cycle.

(iv) *Hazardous waste combustor testing.* If a destruction unit used to destroy a controlled substance is subject to testing under subpart EEE of part 63 of this chapter or any portion of parts 260 through 270 of this chapter, each entity may apply the destruction efficiency specifically determined for controlled substances under that test if the testing meets the criteria in paragraph (d)(7)(i)(A) of this section. If the testing of the destruction efficiency under subpart EEE of part 63 was conducted more than 5 years ago, the entity may use the most recent destruction efficiency test provided that the design, operation, and maintenance of the destruction unit has not changed since the last destruction efficiency test in a manner that could affect the ability

to achieve the destruction efficiency, and the hazardous waste is fed into the normal flame zone.

(8) *Mass of previously produced controlled substances fed into a destruction unit.* Each entity must measure the mass of each controlled substance that is fed into the destruction unit in more than trace concentrations. Such controlled substances include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed. The entity must use flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of ± 1 percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the controlled substance being destroyed, the entity must measure the concentration of the controlled substance being destroyed. The entity must multiply this concentration (mass fraction) by the mass measurement to obtain the mass of the controlled substance fed into the destruction unit.

(9) *Emissions due to malfunctions of destruction unit.* In their estimates of the mass of controlled substances destroyed, facilities that destroy controlled substances must account for any temporary reductions in the destruction efficiency that result from any malfunctions of the destruction unit, including periods of operation outside of the operating conditions defined in operating permit requirements and/or outside of the destruction unit's manufacturer's specifications.

(10) *Emissions due to process startup, shutdown, or malfunctions.* For each process listed in paragraph (b) of this section, each entity must account for emissions of controlled substance that occur at each facility as a result of startups, shutdowns, and malfunctions, either recording controlled substance emissions during these events, or documenting that these events do not result in significant controlled substance emissions. Facilities may use the calculation methods in paragraph (c)(1)(i) of this section to estimate emissions during startups, shutdowns, and malfunctions.

(11) *Development of initial parameters.* Initial scoping specifications, emissions testing, emission factor development, emission calculation factor development, emission characterization development, and destruction efficiency determinations

must be completed by February 7, 2025, for processes and operating scenarios that operate between October 10, 2024, and November 12, 2024. For other processes and operating scenarios, initial scoping specifications, emissions testing, emission factor development, emission calculation factor development, emission characterization development, and destruction efficiency determinations must be complete by February 14 of the year following the year in which the process or operating scenario commences or recommences.

(12) *Calibration for volumetric and density measurements.* Calibrate all flow meters, weigh scales, and combinations of volumetric and density measures using monitoring instruments traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or other recognized national measurement institute. Recalibrate all flow meters, weigh scales, and combinations of volumetric and density measures at the minimum frequency specified by the manufacturer. Use any of the following applicable flow meter test methods or the calibration procedures specified by the flow meter, weigh-scale, or other volumetric or density measure manufacturer.

(i) ASME MFC-3M-2004 Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi (incorporated by reference, see § 82.27).

(ii) ASME MFC-4M-1986 (Reaffirmed 2016) Measurement of Gas Flow by Turbine Meters (incorporated by reference, see § 82.27).

(iii) ASME-MFC-5M-1985, (Reaffirmed 1994) Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters (incorporated by reference, see § 82.27).

(iv) ASME MFC-6M-1998 Measurement of Fluid Flow in Pipes Using Vortex Flowmeters (incorporated by reference, see § 82.27).

(v) ASME MFC-7M-1987 (Reaffirmed 1992) Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles (incorporated by reference, see § 82.27).

(vi) ASME MFC-9M-1988 (Reaffirmed 2001) Measurement of Liquid Flow in Closed Conduits by Weighing Method (incorporated by reference, see § 82.27).

(vii) ASME MFC-11M-2006 Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters (incorporated by reference, see § 82.27).

(viii) ASME MFC-14M-2003 Measurement of Fluid Flow Using Small Bore Precision Orifice Meters (incorporated by reference, see § 82.27).

(13) *Calibration for concentration determinations.* All analytical

equipment used to determine the concentration of controlled substances, including but not limited to gas chromatographs and associated detectors, IR, FTIR, and NMR devices, must be calibrated at a frequency needed to support the type of analysis specified in the monitoring plan as required under paragraph (d)(5)(iii) of this section. Quality assurance samples at the concentrations of concern must be used for the calibration. Such quality assurance samples must consist of or be prepared from certified standards of the analytes of concern where available; if not available, calibration must be performed by a method specified in the monitoring plan.

(e) *Data reporting requirements*—(1) *All facilities*. In addition to the information required by § 82.13, for class I controlled substances, and § 82.24, for class II controlled substances, each entity must report the information in paragraphs (e)(1)(ii) through (iv) of this section according to the schedule in paragraph (e)(1)(i) of this section.

(i) *Frequency of reporting under this paragraph (e)(1)*. The information in paragraphs (e)(1)(ii) through (v) of this section must be reported annually, as applicable.

(ii) *Process identification*. For each process listed in paragraph (b)(2) of this section, each entity must provide:

(A) A description and identification of the process listed in paragraph (b)(2) of this section.

(B) A description and number, letter, or other identifier for each process vent associated with the process. This identifier must be a consistent name reported from year to year.

(C) The type of method(s) (*i.e.*, process-vent-specific emission factor, process-vent-specific emission calculation factor, or mass balance) and each applicable analytical approach (*e.g.*, compliance options under paragraphs (c)(1)(i) and (d)(4) of this section) used to determine the mass emissions from each process vent associated with the process.

(D) The type of method(s) (*e.g.*, site-specific leak monitoring approach or EPA Method 21 monitoring) and each applicable analytical approach (*e.g.*, compliance options under paragraphs (c)(2)(i) and (d)(4) of this section) used to determine the mass emissions from equipment leaks associated with the process.

(iii) *Process emissions*. For each controlled substance, each entity must report the total mass in kilograms of the controlled substance emitted from the processes listed in paragraph (b)(2) of this section.

(iv) *Effective destruction efficiency*. For each process and controlled substance, report the effective destruction efficiency, $DE_{\text{effective}}$, calculated for that process using equation 31 to paragraph (c)(6) of this section.

(v) *Monitoring plan*. The monitoring plan, as specified in paragraph (f)(6) of this section, including any revisions since the prior year's submission as applicable.

(2) *Reporting for emission factor and emission calculation factor approach*.

For processes whose emissions are determined using the emission factor approach under paragraph (c)(1)(iii) of this section or the emission calculation factor under paragraph (c)(1)(iv) of this section, each entity must report the following for each process.

(i) The identity and quantity of the process activity used to estimate emissions (*e.g.*, tons of product produced or tons of reactant consumed) for each process vent associated with the process.

(ii) The site-specific, process-vent-specific emission factor(s) or emission calculation factor for each process vent associated with the process.

(iii) For each controlled substance, the mass emitted from each process vent associated with the process, in kilograms.

(iv) For each controlled substance, the total mass emitted from equipment leaks, in kilograms.

(3) *Reporting for mass balance approach*. For processes whose emissions are determined using the mass-balance approach under paragraph (c)(4) of this section, you must report the information listed in paragraphs (e)(3)(i) through (xiii) of this section for each process on an annual basis. Identify and separately report controlled substance emissions from transformation processes where the controlled substance reactants are produced at another facility. If you use an element other than a halogen in the mass-balance equation pursuant to paragraph (c)(4)(iii) of this section, substitute that element for the halogen in the reporting requirements of this paragraph (e)(3).

(i) If you calculate the relative and absolute errors under paragraph (c)(4)(i) of this section, the absolute and relative errors calculated under paragraph (c)(4)(i) of this section, as well as the data (including quantities and their accuracies and precisions) used in these calculations.

(ii) The balanced chemical equation that describes the reaction used to manufacture the controlled substance

product and each controlled substance transformation product.

(iii) The mass and chemical formula of each controlled substance reactant emitted from the process in metric tons.

(iv) The mass and chemical formula of the controlled substance product emitted from the process in metric tons.

(v) The mass and chemical formula of each controlled substance byproduct emitted from the process in metric tons.

(vi) The mass and chemical formula of each controlled substance reactant that is fed into the process (metric tons).

(vii) The mass and chemical formula of each halogen-containing product produced by the process (metric tons).

(viii) If you use paragraph (c)(4)(iv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, report the following:

(A) The mass and chemical formula of each halogen-containing product that is removed from the process and fed into the destruction device (metric tons).

(B) The mass and chemical formula of each halogen-containing byproduct that is removed from the process and fed into the destruction device (metric tons).

(C) The mass and chemical formula of each halogen-containing reactant that is removed from the process and fed into the destruction device (metric tons).

(D) The mass and chemical formula of each halogen-containing byproduct that is removed from the process and recaptured (metric tons).

(E) The demonstrated destruction efficiency of the destruction device for each controlled substance fed into the device from the process in greater than trace concentrations (fraction).

(ix) If you use paragraph (c)(4)(xv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, report the following:

(A) The mass of halogen in each stream that is fed into the destruction device (metric tons).

(B) The mass of halogen that is recaptured (metric tons).

(C) The weighted average destruction efficiency of the destruction device calculated for each stream under paragraph (c)(4)(xvi) of this section.

(x) The fraction of the mass emitted that consists of each halogen-containing reactant.

(xi) The fraction of the mass emitted that consists of the halogen-containing product.

(xii) The fraction of the mass emitted that consists of each halogen-containing byproduct.

(xiii) The method used to estimate the total mass of halogen in destroyed or recaptured streams (specify paragraph (c)(4)(iv) or (xv) of this section).

(4) *Reporting of destruction unit excess emission data.* Each facility that destroys a controlled substance must report the excess emissions that result from malfunctions of the destruction unit, and these excess emissions must be reflected in the controlled substance estimates in paragraph (c)(1) of this section. Such excess emissions would occur if the destruction efficiency was reduced due to the malfunction.

(5) *Reporting of destruction unit testing.* By February 7, 2025, or by February 14 of the year immediately following the year in which it begins controlled substance destruction, each facility that destroys controlled substances must submit a report containing the information in paragraphs (e)(5)(i) through (iii) of this section. This report is one-time unless a change is made to the destruction unit that would be expected to affect its destruction efficiencies.

(i) Chemical identity of the controlled substance(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate the destruction efficiency for each controlled substance, consistent with requirements in paragraph (d)(7)(i) of this section, vented to the destruction unit.

(ii) Date of the most recent destruction unit test.

(iii) Name of all applicable Federal or State regulations that may apply to the destruction process.

(6) *Reporting for destruction.* Each facility that destroys controlled substances must report, separately from the controlled substance emissions reported under paragraph (e)(2) of this section, the following for each previously produced controlled substance destroyed:

(i) The mass of the controlled substance emitted from the destruction unit (kilograms).

(ii) [Reserved]

(7) *Reporting of controlled substance products of incomplete combustion (PICs) of controlled substances.* Each facility that destroys controlled substances must submit a one-time report by February 7, 2025, or by February 14 of the year immediately following the year in which it begins controlled substance destruction, that describes any measurements, research, or analysis that it has performed or obtained that relate to the formation of products of incomplete combustion that are controlled substances during the destruction of controlled substances. The report must include the methods and results of any measurement or modeling studies, including the

products of incomplete combustion for which the exhaust stream was analyzed, as well as copies of relevant scientific papers, if available, or citations of the papers, if they are not. No new testing is required to fulfill the requirement of this paragraph (e)(7).

(f) *Records that must be retained.* Each entity must retain the dated records specified in paragraphs (f)(1) through (6) of this section, as applicable, and be able to provide such information to EPA within 5 business days of the date the records are requested.

(1) *Process information records.* (i) Identify all processes subject to this section. Include the unit identification as appropriate, the process identification reported for the process under paragraphs (e)(1)(ii)(A) through (B) of this section, and the product with which the process is associated.

(ii) Monthly and annual records, as applicable, of all analyses and calculations conducted as required under paragraph (c) of this section, including the data monitored under paragraph (d) of this section, and all information reported as required under paragraph (e) of this section.

(2) *Scoping speciation.* Retain records documenting the information collected under paragraph (d)(1) of this section.

(3) *Emission factor and emission calculation factor method.* Retain the following records for each process for which the emission factor or emission calculation factor method was used to estimate emissions.

(i) Identify all continuous process vents with emissions of controlled substances that are included in the top 25 percent of continuous process vents, and all continuous process vents in the remaining group (*i.e.*, 75 percent of continuous process vents with lower emissions of controlled substances). Include the data and calculation used to develop the preliminary estimate of emissions for each process vent.

(ii) Identify all batch process vents.

(iii) For each vent, identify the method used to develop the factor (*i.e.*, emission factor by emissions test or emission calculation factor).

(iv) The emissions test data and reports (see paragraph (d)(2)(v) of this section) and the calculations used to determine the process-vent-specific emission factor, including the actual process-vent-specific emission factor, the average hourly emission rate of each controlled substance from the process vent during the test and the process feed rate, process production rate, or other process activity rate during the test.

(v) The process-vent-specific emission calculation factor and the calculations

used to determine the process-vent-specific emission calculation factor.

(vi) The annual process production quantity or other process activity information in the appropriate units, along with the dates and time period during which the process was operating and dates and time periods the process vents are vented to the destruction unit. As an alternative to date and time periods when process vents are vented to the destruction unit, a facility may track dates and time periods that process vents by-pass the destruction unit.

(vii) Calculations used to determine annual emissions of each controlled substance for each process and the total controlled substance emissions for all processes, *i.e.*, total for facility.

(4) *Mass-balance method.* Retain the following records for each process for which the mass-balance method was used to estimate emissions. If you use an element other than a halogen in the mass-balance equation pursuant to paragraph (c)(4)(iii) of this section, substitute that element for the halogen in the recordkeeping requirements of this paragraph (f)(4).

(i) The data and calculations used to estimate the absolute and relative errors associated with use of the mass-balance approach.

(ii) The data and calculations used to estimate the mass of halogen emitted from the process.

(iii) The data and calculations used to determine the fractions of the mass emitted consisting of each reactant (FERd), product (FEP), and byproduct (FEBk), including the preliminary calculations in paragraph (c)(4)(viii)(A) of this section.

(5) *Destruction efficiency testing.* A facility that destroys controlled substances and reflects this destruction in paragraph (c) of this section must retain the emissions performance testing reports (including revised reports) for each destruction unit. The emissions performance testing report must contain all information and data used to derive the destruction efficiency for each controlled substance whose destruction the facility reflects in paragraph (c) of this section, as well as the key process and device conditions during the test. This information includes the following:

(i) Destruction efficiency (DE) determined for each controlled substance whose destruction the facility reflects in paragraph (c) of this section, in accordance with paragraph (d)(7)(i)(A) of this section.

(ii) Chemical identity of the controlled substance(s) used in the performance test conducted to determine destruction efficiency,

including surrogates, and information on why the surrogate is sufficient to demonstrate destruction efficiency for each controlled substance, consistent with requirements in paragraph (d)(7)(i)(A) of this section, vented to the destruction unit.

(iii) Mass flow rate of the stream containing the controlled substance or surrogate into the device during the test.

(iv) Concentration (mass fraction) of each controlled substance or surrogate in the stream flowing into the device during the test.

(v) Concentration (mass fraction) of each controlled substance or surrogate at the outlet of the destruction unit during the test.

(vi) Mass flow rate at the outlet of the destruction unit during the test.

(vii) Test methods and analytical methods used to determine the mass flow rates and controlled substance (or surrogate) concentrations of the streams flowing into and out of the destruction unit during the test.

(viii) Destruction unit conditions that are normally monitored for device control, such as temperature, total mass flow rates into the device, and CO or O₂ levels.

(ix) Name of all applicable Federal or State regulations that may apply to the destruction process.

(6) *Equipment leak records.* If the equipment is subject to paragraph (c)(2) of this section, each entity must maintain information on the number of each type of equipment, the service of each piece of equipment (gas, light liquid, heavy liquid); the concentration of each controlled substance in the stream; each piece of equipment excluded from monitoring requirement; the time period each piece of equipment was in service, and the emission calculations for each controlled substance for all processes. Depending on the equipment leak monitoring approach followed, each entity must maintain information for equipment on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; and associated screening data and leak rate data (*i.e.*, bagging) used to develop a unit-specific correlation. If a site-specific leak detection approach was developed and followed, provide the records for monitoring events and the emissions estimation calculations, as appropriate, consistent with the approach for equipment leak emission estimation in the monitoring plan.

(7) *All facilities.* Dated records documenting the initial and periodic

calibration of all analytical equipment used to determine the concentration of controlled substances, including but not limited to gas chromatographs, gas chromatography-mass spectrometry, gas chromatograph-electron capture detector, FTIR, and NMR devices, and all mass measurement equipment such as weigh scales, flowmeters, and volumetric and density measures used to measure the quantities reported under this section, including the industry standards or manufacturer directions used for calibration pursuant to paragraphs (d)(5), (6), (12), and (13) of this section.

(8) *Controlled substance monitoring plan.* A Controlled Substance Monitoring Plan must be completed by February 7, 2025, or within 120 days of the date that an entity first meets the criteria in paragraph (a) of this section.

(i) At a minimum, the monitoring plan shall include the elements listed in this paragraph (f)(8)(i) of this section.

(A) Identification of positions of responsibility (*i.e.*, job titles) for collection of the emission data.

(B) Explanation of the processes and methods used to collect the necessary data for calculations under this section.

(C) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the controlled substances reported under this part.

(ii) The monitoring plan may rely on references to existing corporate documents (*e.g.*, standard operating procedures, quality assurance programs under appendix F to 40 CFR part 60 or appendix B to 40 CFR part 75, and other documents) provided that the elements required by paragraph (f)(8)(i) of this section are easily recognizable.

(iii) The owner or operator shall revise the monitoring as needed to reflect changes in production processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.

■ 7. Add § 82.26 to read as follows:

§ 82.26 Treatment of data submitted under this subpart.

(a) Sections 2.201 through 2.215 and 2.301 of this chapter do not apply to data submitted under this subpart that EPA has determined through rulemaking to be either of the following:

(1) Emission data, as defined in § 2.301(a)(2) of this chapter, determined in accordance with section 114(c) and 307(d) of the Clean Air Act; or

(2) Data not otherwise entitled to confidential treatment.

(b) Except as otherwise provided in paragraph (d) of this section and §§ 2.201 through 2.208 and 2.301(c) and (d) of this chapter do not apply to data submitted under this part that EPA has determined through rulemaking to be entitled to confidential treatment. EPA shall treat that information as confidential in accordance with the provisions of § 2.211 of this chapter, subject to paragraph (d) of this section and § 2.209 of this chapter.

(c) Upon receiving a request under 5 U.S.C. 552 for data submitted under this part that EPA has determined through rulemaking to be entitled to confidential treatment, the relevant Agency official shall furnish the requestor a notice that the information has been determined to be entitled to confidential treatment and that the request is therefore denied. The notice shall include or cite to the appropriate EPA determination.

(d) A determination made through rulemaking that information submitted under this part is entitled to confidential treatment shall continue in effect unless, subsequent to the confidentiality determination through rulemaking, EPA takes one of the following actions:

(1) EPA determines through a subsequent rulemaking that the information is emission data or data not otherwise entitled to confidential treatment; or

(2) The Office of General Counsel issues a final determination, based on the requirements of 5 U.S.C. 552(b)(4), stating that the information is no longer entitled to confidential treatment because of change in the applicable law or newly discovered or changed facts. Prior to making such final determination, EPA shall afford the business an opportunity to submit comments on pertinent issues in the manner described by §§ 2.204(e) and 2.205(b) of this chapter. If, after consideration of any timely comments submitted by the business, the Office of General Counsel makes a revised final determination that the information is not entitled to confidential treatment, the relevant agency official will notify the business in accordance with the procedures described in § 2.205(f)(2) of this chapter.

■ 8. Add § 82.27 to read as follows:

§ 82.27 Incorporation by reference.

(a)(1) Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All approved incorporation by reference (IBR) material is available

for inspection at EPA and at the National Archives and Records Administration (NARA). Contact EPA at: U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW, Washington, DC 20460, 202-566-1742. For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

(2) The IBR material may be obtained from the sources in the following paragraphs of this section or from one or more private resellers listed in this paragraph (a)(2). For material that is no longer commercially available, contact: U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW, Washington, DC 20460; a-and-rdoCKET@epa.gov.

(i) Accuris Standards Store, 321 Inverness Drive, South Englewood, CO 80112; phone: (800) 332-6077; website: <https://accuristech.com>.

(ii) American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036-7417; phone: (212) 642-4980; email: info@ansi.org; website: www.ansi.org.

(iii) GlobalSpec, 257 Fuller Road, Suite NFE 1100, Albany, NY 12203-3621; phone: (800) 261-2052; website: <https://standards.globalspec.com>.

(iv) Nimonik Document Center, 401 Roland Way, Suite 224, Oakland, CA 94624; phone (650) 591-7600; email: info@document-center.com; website: www.document-center.com.

(b) American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016, phone: 800.843.2763, email: CustomerCare@asme.org; website: www.asme.org.

(1) ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, issued August 15, 2005; IBR approved for § 82.25(d).

(2) ASME MFC-4M-1986 (Reaffirmed 2016), Measurement of Gas Flow by Turbine Meters, reaffirmed 2016, IBR approved for § 82.25(d).

(3) ASME MFC-5M-1985 (Reaffirmed 1994), Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flow Meters, copyright 1985; IBR approved for § 82.25(d).

(4) ASME MFC-6M-1998, Measurement of Fluid Flow in Pipes Using Vortex Flowmeters, July 4, 1998; IBR approved for § 82.25(d).

(5) ASME MFC-7M-1987 (Reaffirmed 1992), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles, copyright 1987; IBR approved for § 82.25(d).

(6) ASME MFC-9M-1988 (Reaffirmed 2001), Measurement of Liquid Flow in Closed Conduits by Weighing Method, reaffirmed 2001; IBR approved for § 82.25(d).

(7) ASME MFC-11M-2006, Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters, issued March 30, 2007; IBR approved for § 82.25(d).

(8) ASME MFC-14M-2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters, issued April 17, 2003; IBR approved for § 82.25(d).

(c) ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428; phone: 610.832.9500; email: service@astm.org; website: www.astm.org/.

(1) ASTM D6348-03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct

Interface Fourier Transform Infrared (FTIR) Spectroscopy, approved October 1, 2003, IBR approved for § 82.25(d).

(2) [Reserved]

(d) U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460; phone: 202.272.0167; website: www.epa.gov.

(1) Approved Alternative Method 012: An Alternate Procedure for Stack Gas Volumetric Flow Rate Determination (Tracer Gas) (ALT-012), U.S. Environmental Protection Agency Emission Measurement Center, May 23, 1994, IBR approved for § 82.25(d).

(2) Emissions Inventory Improvement Program, Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007, Final, IBR approved for § 82.25(c).

(3) Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995 (EPA-453/R-95-017), IBR approved for § 82.25(c) and (d).

(4) Protocol for Measuring Destruction or Removal Efficiency (DRE) of Fluorinated Greenhouse Gas Abatement Equipment in Electronics Manufacturing, Version 1, EPA-430-R-10-003, March 2010 (EPA 430-R-10-003), IBR approved for § 82.25 (d).

(5) Tracer Gas Protocol for the Determination of Volumetric Flow Rate Through the Ring Pipe of the Xact Multi-Metals Monitoring System, also known as Other Test Method 24 (Tracer Gas Protocol), Eli Lilly and Company Tippecanoe Laboratories, September 2006, IBR approved for § 82.25(d).

[FR Doc. 2024-22380 Filed 10-9-24; 8:45 am]

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