State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

03/30/04

CERTIFIED MAIL

RE: Final Title V Chapter 3745-77 permit

04-48-01-0133
Perstorp Polyols, Inc.
Anthony P. Sloma
600 Matzinger Road
Toledo, OH 43612

Dear Anthony P. Sloma:

Enclosed is the Title V permit that allows you to operate the facility in the manner indicated in the permit. Because this permit may contain several conditions and restrictions, we urge you to read it carefully.

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. It is also requested by the Director that a copy of the appeal be served upon the Environmental Enforcement Section of the Office of the Attorney General. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

If you have any questions, please contact Toledo Div of Environmental Services.

Sincerely,

Michael W. Ahern

Michael W. Ahern
Permit Issuance and Data Management Section
Division of Air Pollution Control

cc: Toledo Div of Environmental Services
File, DAPC PMU

State of Ohio Environmental Protection Agency

FINAL TITLE V PERMIT

Issue Date: **03/30/04**	Effective Date: **04/30/04**	Expiration Date: **04/30/09**

This document constitutes issuance of a Title V permit for Facility ID: 04-48-01-0133 to:
Perstorp Polyols, Inc.
600 Matzinger Road
Toledo, OH 43612

Emissions Unit ID (Company ID)/Emissions Unit Activity Description

B001 (Boiler)
Boiler - Combustion Engineering Model 21A13

B101 (Boiler)
Superior Scotch Marine Boiler

P004 (Formate handling)
Sodium formate handling equipment

P101 (Formaldehyde Mfg)
Process equipment used to manufacture formaldehyde - silver

P801 (TMP and Formate Mfg.)
Manufacture of Trimethylolpropane and Sodium Formate

P803 (PE and Formate Mfg.)
Manufacture of Pentaerythritol and sodium formate

P812 (Formaldehyde Mfg 2)
Formaldehyde manufacturing process (Formox), fugitive VOC leaks

T001 (Formic Acid Tank)
Formic acid storage tank, V-100

T004 (Formaldehyde Tank)
Formaldehyde storage tank, V-145

T006 (Formaldehyde Tank)
85% water and 15% formaldehyde storage tank, V-160

T016 (Formaldehyde Tank)
50% Formaldehyde storage tank, V-130

T017 (Methanol Tank)
Methanol storage tank, V-146

T020 (TMP Storage Tank)
Molten Trimethylolpropane storage tank, V-900

T021 (TMP Storage Tank)
Molten Trimethylolpropane storage tank, V-910

T023 (Neopentylgylcol tank)
Neopentyl Glycol tank, V-980

T024 (TMP co-product tank)
Storage tank for TMP co-product V-990

T025 (Formaldehyde Tank)
Formaldehyde storage tank - penta plant V-120

T026 (Blend tank)
Methanol/formaldehyde blend storage tank V-55

T027 (Blend tank)
Methanol/formaldehyde blend storage tank V-56

T028 (Blend tank)
Methanol/formaldehyde blend storage tank V-57

T029 (Blend tank)
Methanol/formaldehyde blend storage tank V-58

T101 (Formaldehyde Tank)
Formaldehyde storage tank #54 - fixed roof

T102 (Formaldehyde Tank)
Formaldehyde storage tank #59 - fixed roof

T104 (Methanol tank)
Methanol storage tank V-10

T105 (Blend tank)
Methanol/formaldehyde blend storage tank #202.102-1.1

T106 (Blend tank)
Methanol/formaldehyde blend storage tank #202.103-1.1

T108 (Methanol tank V-100)
Methanol storage tank V-100

T109 (Formaldehyde tank V-510)
Formaldehyde storage tank V-510

T110 (Formaldehyde tank V-520)
Formaldehyde storage tank V-520

T111 (Formaldehyde tank V-530)
Formaldehyde storage tank V-530

You will be contacted approximately eighteen (18) months prior to the expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency listed below. This permit and the authorization to operate the air contaminant sources (emissions units) at this facility shall expire at midnight on the expiration date shown above. If a renewal permit is not issued prior to the expiration date, the permittee may continue to operate pursuant to OAC rule 3745-77-08(E) and in accordance with the terms of this permit beyond the expiration date, provided that a complete renewal application is submitted no earlier than eighteen (18) months and no later than one-hundred eighty (180) days prior to the expiration date.

Described below is the current Ohio EPA District Office or local air agency that is responsible for processing and administering your Title V permit:

Toledo Div of Environmental Services
348 South Erie Street
Toledo, OH 43602-1633
(419) 936-3015

OHIO ENVIRONMENTAL PROTECTION AGENCY

Christopher Jones
Director

PART I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Section

1. Monitoring and Related Record Keeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Section A.III of Part III of this Title V permit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.
ii. The date(s) analyses were performed.
iii. The company or entity that performed the analyses.
iv. The analytical techniques or methods used.
v. The results of such analyses.
vi. The operating conditions existing at the time of sampling or measurement.
(Authority for term: OAC rule 3745-77-07(A)(3)(b)(i))

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
(Authority for term: OAC rule 3745-77-07(A)(3)(b)(ii))

c. The permittee shall submit required reports in the following manner:

i. **All reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations caused by malfunctions shall be submitted in the following manner:**

Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be promptly reported to the Ohio EPA in accordance with OAC rule 3745-15-06. In addition, to fulfill the OAC rule 3745-77-07(A)(3)(c) deviation reporting requirements for malfunctions, written reports that identify each malfunction that occurred during each calendar quarter (including each malfunction reported only verbally in accordance with OAC rule 3745-15-06) shall be submitted by January 31, April 30, July 31, and October 31 of each year in accordance with General Term and Condition A.1.c.ii below; and each report shall cover the previous calendar quarter.

In accordance with OAC rule 3745-15-06, a malfunction constitutes a violation of an emission limitation (or control requirement) and, therefore, is a deviation of the federally enforceable permit requirements. Even though verbal notifications and written reports are required for malfunctions pursuant to OAC rule 3745-15-06, the written reports required pursuant to this term must be submitted quarterly to satisfy the prompt reporting provision of OAC rule 3745-77-07(A)(3)(c).

In identifying each deviation caused by a malfunction, the permittee shall specify the emission limitation(s) (or control requirement(s)) for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. For a specific malfunction, if this information has been provided in a written report that was submitted in accordance with OAC rule 3745-15-06, the permittee may simply reference that written report to identify the deviation. Nevertheless, all malfunctions, including those reported only verbally in accordance with OAC rule 3745-15-06, must be reported in writing on a quarterly basis.

Any scheduled maintenance, as referenced in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described above for malfunctions.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

ii. **Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Section A.IV of Part III of this Title V permit or, in some cases, in Part II of this Title V permit, all reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations of the emission limitations, operational restrictions, and control device operating parameter limitations shall be submitted in the following manner:**

Written reports of (a) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures taken, shall be promptly made to the appropriate Ohio EPA District Office or local air agency. Except as provided below, the written reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

In identifying each deviation, the permittee shall specify the emission limitation(s), operational restriction(s), and/or control device operating parameter limitation(s) for which the deviation occurred, describe each deviation, and provide the estimated magnitude and duration of each deviation.

These written reports shall satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations. OAC rule 3745-77-07(A)(3)(c) is not fully satisfied until the permittee addresses all other deviations of the federally enforceable requirements specified in the permit.

If an emissions unit has a deviation reporting requirement for a specific emission limitation, operational restriction, or control device operating parameter limitation that is not on a quarterly basis (e.g., within 30 days following the end of the calendar month, or within 30 or 45 days after the exceedance occurs), that deviation reporting requirement overrides the reporting requirements specified in this General Term and Condition for that specific emission limitation, operational restriction, or control device parameter limitation. Following the provisions of that non-quarterly deviation reporting requirement will also satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations, and additional quarterly deviation reports for that specific emission limitation, operational restriction, or control device parameter limitation are not required pursuant to this General Term and Condition.

See B.6 below if no deviations occurred during the quarter.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

iii. **All reporting required in accordance with the OAC rule 3745-77-07(A)(3)(c) for other deviations of the federally enforceable permit requirements which are not reported in accordance with General Term and Condition A.1.c.ii above shall be submitted in the following manner:**

Written reports that identify all other deviations of the federally enforceable requirements contained in this permit, including the monitoring, record keeping, and reporting requirements, which are not reported in accordance with General Term and Condition A.1.c.ii above shall be

submitted to the appropriate Ohio EPA District Office or local air agency by January 31 and July 31 of each year; and each report shall cover the previous six calendar months.

In identifying each deviation, the permittee shall specify the federally enforceable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation.

These semi-annual written reports shall satisfy the reporting requirements of OAC rule 3745-77-07(A)(3)(c) for any deviations from the federally enforceable requirements contained in this permit that are not reported in accordance with General Term and Condition A.1.c.ii above.

If no such deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no such deviations occurred during that period.
(Authority for term: OAC rules 3745-77-07(A)(3)(c)(i) and (ii))

iv. Each written report shall be signed by a responsible official certifying that, "based on information and belief formed after reasonable inquiry, the statements and information in the report (including any written malfunction reports required by OAC rule 3745-15-06 that are referenced in the deviation reports) are true, accurate, and complete."
(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iv))

v. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

2. Scheduled Maintenance

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. Except as provided in OAC rule 3745-15-06(A)(3), any scheduled maintenance necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s). Any scheduled maintenance, as defined in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described for malfunctions in General Term and Condition A.1.c.i above.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

3. Risk Management Plans

If applicable, the permittee shall develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. ("Act"); and, pursuant to 40 C.F.R. 68.215(a), the permittee shall submit either of the following:

a. a compliance plan for meeting the requirements of 40 C.F.R. Part 68 by the date specified in 40 C.F.R. 68.10(a) and OAC 3745-104-05(A); or

b. as part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 C.F.R. Part 68 and OAC Chapter 3745-104, including the registration and submission of the risk management plan.

(Authority for term: OAC rule 3745-77-07(A)(4))

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

(Authority for term: OAC rule 3745-77-07(A)(5))

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
(Authority for term: OAC rule 3745-77-07(A)(6))

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause, in accordance with A.10 below. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(Authority for term: OAC rule 3745-77-07(A)(7))

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78.
(Authority for term: OAC rule 3745-77-07(A)(8))

8. Marketable Permit Programs

No revision of this permit is required under any approved economic incentive, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.
(Authority for term: OAC rule 3745-77-07(A)(9))

9. Reasonably Anticipated Operating Scenarios

The permittee is hereby authorized to make changes among operating scenarios authorized in this permit without notice to the Ohio EPA, but, contemporaneous with making a change from one operating scenario to another, the permittee must record in a log at the permitted facility the scenario under which the permittee is operating. The permit shield provided in these general terms and conditions shall apply to all operating scenarios authorized in this permit.
(Authority for term: OAC rule 3745-77-07(A)(10))

10. Reopening for Cause

This Title V permit will be reopened prior to its expiration date under the following conditions:

a. Additional applicable requirements under the Act become applicable to one or more emissions units covered by this permit, and this permit has a remaining term of three or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to paragraph (E)(1) of OAC rule 3745-77-08.

b. This permit is issued to an affected source under the acid rain program and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit, and shall not require a reopening of this permit.

c. The Director of the Ohio EPA or the Administrator of the U.S. EPA determines that the federally applicable requirements in this permit are based on a material mistake, or that inaccurate statements were made in establishing the emissions standards or other terms and conditions of this permit related to such federally applicable requirements.

d. The Administrator of the U.S. EPA or the Director of the Ohio EPA determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

(Authority for term: OAC rules 3745-77-07(A)(12) and 3745-77-08(D))

11. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

(Authority for term: OAC rule 3745-77-07(B))

12. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this Title V permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with paragraph (E) of OAC rule 3745-77-03.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

d. Compliance certifications concerning the terms and conditions contained in this permit that are federally enforceable emission limitations, standards, or work practices, shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) and the Administrator of the U.S. EPA in the following manner and with the following content:

i. Compliance certifications shall be submitted annually on a calendar year basis. The annual certification shall be submitted on or before April 30th of each year during the permit term.
ii. Compliance certifications shall include the following:
(a) An identification of each term or condition of this permit that is the basis of the certification.
(b) The permittee's current compliance status.
(c) Whether compliance was continuous or intermittent.
(d) The method(s) used for determining the compliance status of the source currently and over the required reporting period.
(e) Such other facts as the Director of the Ohio EPA may require in the permit to determine the compliance status of the source.
iii. Compliance certifications shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(Authority for term: OAC rules 3745-77-07(C)(1),(2),(4) and (5) and ORC section 3704.03(L))

13. Permit Shield

a. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC rule 3745-77-07) shall be deemed compliance with the applicable requirements identified and addressed in this permit as of the date of permit issuance.

b. This permit shield provision shall apply to any requirement identified in this permit pursuant to OAC rule 3745-77-07(F)(2), as a requirement that does not apply to the source or to one or more emissions units within the source.

(Authority for term: OAC rule 3745-77-07(F))

14. Operational Flexibility

The permittee is authorized to make the changes identified in OAC rule 3745-77-07(H)(1)(a) to (H)(1)(c) within the permitted stationary source without obtaining a permit revision, if such change is not a modification under any provision of Title I of the Act [as defined in OAC rule 3745-77-01(JJ)], and does not result in an exceedance of the emissions allowed under this permit (whether expressed therein as a rate of emissions or in terms of total emissions), and the permittee provides the Administrator of the U.S. EPA and the appropriate Ohio EPA District Office or local air agency with written notification within a minimum of seven days in advance of the proposed changes, unless the change is associated with, or in response to, emergency conditions. If less than seven days notice is provided because of a need to respond more quickly to such emergency conditions, the permittee shall provide notice to the Administrator of the U.S. EPA and the appropriate District Office of the Ohio EPA or local

air agency as soon as possible after learning of the need to make the change. The notification shall contain the items required under OAC rule 3745-77-07(H)(2)(d).
(Authority for term: OAC rules 3745-77-07(H)(1) and (2))

15. Emergencies

The permittee shall have an affirmative defense of emergency to an action brought for noncompliance with technology-based emission limitations if the conditions of OAC rule 3745-77-07(G)(3) are met. This emergency defense provision is in addition to any emergency or upset provision contained in any applicable requirement.
(Authority for term: OAC rule 3745-77-07(G))

16. Off-Permit Changes

The owner or operator of a Title V source may make any change in its operations or emissions at the source that is not specifically addressed or prohibited in the Title V permit, without obtaining an amendment or modification of the permit, provided that the following conditions are met:

a. The change does not result in conditions that violate any applicable requirements or that violate any existing federally enforceable permit term or condition.

b. The permittee provides contemporaneous written notice of the change to the Director and the Administrator of the U.S. EPA. Such written notice shall describe each such change, the date of such change, any change in emissions or pollutants emitted, and any federally applicable requirement that would apply as a result of the change.

c. The change shall not qualify for the permit shield under OAC rule 3745-77-07(F).

d. The permittee shall keep a record describing all changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e. The change is not subject to any applicable requirement under Title IV of the Act or is not a modification under any provision of Title I of the Act.

Paragraph (I) of rule 3745-77-07 of the Administrative Code applies only to modification or amendment of the permittee's Title V permit. The change made may require a permit to install under Chapter 3745-31 of the Administrative Code if the change constitutes a modification as defined in that Chapter. Nothing in paragraph (I) of rule 3745-77-07 of the Administrative Code shall affect any applicable obligation under Chapter 3745-31 of the Administrative Code.
(Authority for term: OAC rule 3745-77-07(I))

17. Compliance Method Requirements

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding.
(This term is provided for informational purposes only.)

18. Insignificant Activities

Each insignificant activity that has one or more applicable requirements shall comply with those applicable requirements.
(Authority for term: OAC rule 3745-77-07(A)(1))

19. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.
(Authority for term: OAC rule 3745-77-07(A)(1))

20. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.
(Authority for term: OAC rule 3745-77-07(A)(1))

21. Permanent Shutdown of an Emissions Unit

The permittee may notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification by the responsible official of the date on which the emissions unit was permanently shut down. Authorization to operate the affected part or activity of the stationary source shall cease upon the date certified by the responsible official that the emissions unit was permanently shut down.

If an emissions unit is permanently shut down (i.e., that has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31 and therefore ceases to meet the definition of an "emissions unit" as defined in OAC rule 3745-77-01(O)), rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the date of the certification and submission to Ohio EPA, to meet any monitoring, record keeping, reporting, or testing requirements, applicable to that emissions unit, except for any residual requirements, such as the quarterly deviation reports, semi-annual deviation reports and annual compliance certification covering the period during which the emissions unit last operated. All records relating to the shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law.

No emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit to install pursuant to OAC Chapter 3745-31.

B. *State Only Enforceable Section*

1. Reporting Requirements Related to Monitoring and Record Keeping Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (i) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. In identifying each deviation, the permittee shall specify the applicable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

2. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

3. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

4. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

5. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

6. Additional Reporting Requirements When There Are No Deviations of <u>Federally Enforceable</u> Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no emission limitation (or control requirement), operational restriction and/or control device parameter limitation deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

The permittee is not required to submit a quarterly report which states that no deviations occurred during that quarter for the following situations:

a. where an emissions unit has deviation reporting requirements for a specific emission limitation, operational restriction, or control device parameter limitation that override the deviation reporting requirements specified in General Term and Condition A.1.c.ii;

b. where an uncontrolled emissions unit has no monitoring, record keeping, or reporting requirements and the emissions unit's applicable emission limitations are established at the potentials to emit; and

c. where the company's responsible official has certified that an emissions unit has been permanently shut down.

Part II - Specific Facility Terms and Conditions

A. State and Federally Enforceable Section

(Note: The terms and conditions derived directly from 40 CFR Part 63, Subparts G and H and 40 CFR Part 60, Subpart VV and are structured as in those applicable standards.)

1. 40 Section 63.110 CFR Part 63, Subpart G

1.a Applicability.

(a) This subpart applies to all process vents, storage vessels, transfer racks, wastewater streams, and in-process equipment subject to section 63.149 within a source subject to Subpart F of this part.

(b) Overlap with other regulations for storage vessels.

(1) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 1 or Group 2 storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 1 storage vessel that is also subject to the provisions of 40 CFR Part 61, Subpart Y is required to comply only with the provisions of this subpart.

(3) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 2 storage vessel that is also subject to the provisions of 40 CFR Part 61, Subpart Y is required to comply only with the provisions of 40 CFR Part 61, Subpart Y. The record keeping and reporting requirements of 40 CFR Part 61, Subpart Y will be accepted as compliance with the record keeping and reporting requirements of this subpart.

(c) Overlap with other regulations for transfer racks.

(1) [This section is not applicable to the permittee.]

(2) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 2 transfer rack that is also subject to the provisions of 40 CFR Part 61, Subpart BB is required to comply with the provisions of either paragraph (c)(2)(i) or (c)(2)(ii) of this subpart.

(i) If the transfer rack is subject to the control requirements specified in section 61.302 of 40 CFR Part 61, Subpart BB, then the transfer rack is required to comply with the control requirements of section 61.302 of 40 CFR Part 61, Subpart BB. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and record keeping requirements of 40 CFR Part 61, Subpart BB or with the testing, monitoring, record keeping, and reporting requirements specified in this subpart for Group 1 transfer racks. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in section 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the transfer rack is subject only to reporting and record keeping requirements under 40 CFR Part 61, Subpart BB, then the transfer rack is required to comply only with the reporting and record keeping requirements specified in this subpart for Group 2 transfer racks and is exempt from the reporting and record keeping requirements in 40 CFR Part 61, Subpart BB.

(d) Overlap with other regulations for process vents.

(1) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR Part 60, Subpart III is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in section 63.100 of Subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR Part 60, Subpart III shall determine requirements according to paragraphs (d)(2)(i) and (d)(2)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR Part 60, Subpart III, the process vent is required to comply with the provisions in paragraphs (d)(2)(i)(A) through (d)(2)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR Part 60, Subpart III for applicability determination and the associated record keeping and reporting;

(B) The provisions in both this subpart and in 40 CFR Part 60, Subpart III for process changes and recalculation of the TRE index value and the associated record keeping and reporting; and

(C) The control requirements in section 60.612 of 40 CFR Part 60, Subpart III. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and record keeping requirements of 40 CFR Part 60, Subpart III or with the testing, monitoring, reporting, and record keeping requirements specified in this Subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in section 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR Part 60, Subpart III, the process vent is required to comply only with the provisions specified in paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR Part 60, Subpart III for applicability determination and the associated record keeping and reporting;

(B) The provisions in both this subpart and in 40 CFR Part 60, Subpart III for process changes and recalculation of the TRE index value and the associated record keeping and reporting;

(C) If the provisions of both this subpart and 40 CFR Part 60, Subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and record keeping.

(D) If only the provisions of 40 CFR Part 60, Subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR Part 60, Subpart III for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and record keeping.

(3) After the compliance dates specified in 63.100 of Subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR Part 60, Subpart III elects to control the process vent to the levels required in section 63.113 (a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in section 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and record keeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and record keeping provisions of 40 CFR Part 60, Subpart III.

(4) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR Part 60, Subpart NNN is required to comply only with the provisions of this subpart.

(5) After the compliance dates specified in section 63.100 of Subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR Part 60, Subpart NNN shall determine requirements according to paragraphs (d)(5)(i) and (d)(5)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR Part 60, Subpart NNN, the process vent is required to comply with the provisions in paragraphs (d)(5)(i)(A) through (d)(5)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR Part 60, Subpart NNN for applicability determination and the associated record keeping and reporting;

(B) The provisions in both this subpart and in 40 CFR Part 60, Subpart NNN for process changes and recalculation of the TRE index value and the associated record keeping and reporting; and

(C) The control requirements in section 60.662 of 40 CFR Part 60, Subpart NNN. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and record keeping requirements of 40 CFR Part 60, Subpart NNN or with the testing, monitoring, reporting, and record keeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in section 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR Part 60, Subpart NNN, the process vent is required to comply only with the provisions specified in paragraphs (d)(5)(ii)(A) through (d)(5)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR Part 60, Subpart NNN for applicability determination and the associated record keeping and reporting;

(B) The provisions in both this subpart and in 40 CFR Part 60, Subpart NNN for process changes and recalculation of the TRE index value and the associated record keeping and reporting;

(C) If the provisions of both this subpart and 40 CFR Part 60, Subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and record keeping.

(D) If only the provisions of 40 CFR Part 60, Subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR Part 60, Subpart NNN for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and record keeping.

(6) After the compliance dates specified in section 63.100 of Subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR Part 60, Subpart NNN elects to control the process vent to the levels required in section 63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in section 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and record keeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and record keeping provisions of 40 CFR Part 60, Subpart NNN.

(7) After the compliance dates specified in section 63.100 of Subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR Part 60, Subpart RRR is required to comply only with the provisions of this subpart.

(8) After the compliance dates specified in section 63.100 of Subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR Part 60, Subpart RRR shall determine requirements according to paragraphs (d)(8)(i) and (d)(8)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR Part 60, Subpart RRR, the process vent is required to comply with the provisions in paragraphs (d)(8)(i)(A) through (d)(8)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR Part 60, Subpart RRR for applicability determination and the associated record keeping and reporting;

(B) The provisions in both this subpart and in 40 CFR Part 60, Subpart RRR for process changes and recalculation of the TRE index value and the associated record keeping and reporting; and

(C) The control requirements in section 60.702 of 40 CFR Part 60, Subpart RRR. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and record keeping requirements of 40 CFR Part 60, Subpart RRR or with the testing, monitoring, reporting, and record keeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in section 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR Part 60, Subpart RRR, the process vent is required to comply only with the provisions specified in paragraphs (d)(8)(ii)(A) through (d)(8)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR Part 60, Subpart RRR for applicability determination and the associated record keeping and reporting;

(B) The provisions in both this subpart and in 40 CFR Part 60, Subpart RRR for process changes and recalculation of the TRE index value and the associated record keeping and reporting;

(C) If the provisions of both this subpart and 40 CFR Part 60, Subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and record keeping.

(D) If only the provisions of 40 CFR Part 60, Subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR Part 60, Subpart RRR for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and record keeping.

(9) After the compliance dates specified in section 63.100 of Subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR Part 60, Subpart RRR elects to control the process vent to the levels required in section 63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in section 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and record keeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and record keeping provisions of 40 CFR Part 60, Subpart RRR.

(10) As an alternative to the requirements of paragraphs (d)(2), (d)(3), (d)(5), (d)(6), (d)(8), and/or (d)(9) of this section as applicable, if a chemical manufacturing process unit has equipment subject to the provisions of this subpart and equipment subject to the provisions of 40 CFR Part 60, Subpart III, NNN, or RRR, the owner or operator may elect to apply this subpart to all such equipment in the chemical manufacturing process unit. If the owner or operator elects this method of compliance, all total organic compounds minus methane and ethane, in such equipment shall be considered for purposes of applicability and compliance with this subpart, as if they were organic hazardous air pollutants. Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with 40 CFR Part 60, Subpart III, NNN, or RRR, as applicable.

(e) Overlap with other regulations for wastewater.

(1) After the compliance dates specified in section 63.100 of Subpart F of this part, the owner or operator of a Group 1 or Group 2 wastewater stream that is also subject to the provisions of 40 CFR Part 61, Subpart FF is required to comply with the provisions of both this subpart and 40 CFR Part 61, Subpart FF. Alternatively, the owner or operator may elect to comply with the provisions of paragraphs (e)(1)(i) and (e)(1)(ii) of this section, which shall constitute compliance with the provisions of 40 CFR Part 61, Subpart FF.

(i) Comply with the provisions of this subpart; and

(ii) For any Group 2 wastewater stream or organic stream whose benzene emissions are subject to control through the use of one or more treatment processes or waste management units under the provisions of 40 CFR Part 61, Subpart FF on or after December 31, 1992, comply with the requirements of this subpart for Group 1 wastewater streams.

(2) After the compliance dates specified in section 63.100 of Subpart F of this part, the owner or operator of any Group 1 or Group 2 wastewater stream that is also subject to provisions in 40 CFR Parts 260 through 272 shall comply with the requirements of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(i) For each Group 1 or Group 2 wastewater stream, the owner or operator shall comply with the more stringent control requirements (e.g., waste management units, numerical treatment standards, etc.) and the more stringent testing, monitoring, record keeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR Parts 260 through 272. The owner or operator shall keep a record of the information used to

determine which requirements were the most stringent and shall submit this information if requested by the Administrator; or

(ii) The owner or operator shall submit, no later than four months before the applicable compliance date specified in section 63.100 of Subpart F of this part, a request for a case-by-case determination of requirements. The request shall include the information specified in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) Identification of the wastewater streams that are subject to this subpart and to provisions in 40 CFR Parts 260 through 272, determination of the Group 1/Group 2 status of those streams, determination of whether or not those streams are listed or exhibit a characteristic as specified in 40 CFR Part 261, and determination of whether the waste management unit is subject to permitting under 40 CFR Part 270.

(B) Identification of the specific control requirements (e.g., waste management units, numerical treatment standards, etc.) and testing, monitoring, record keeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR Parts 260 through 272.

(f) [This section is not applicable to the permittee.]

(g) [This section is not applicable to the permittee.]

(h) Overlap with other regulations for monitoring, record keeping, or reporting with respect to combustion devices, recovery devices, or recapture devices. After the compliance dates specified in section 63.100 of Subpart F of this part, if any combustion device, recovery device, or recapture device subject to this subpart is also subject to monitoring, record keeping, and reporting requirements in 40 CFR Part 264, Subpart AA or CC, or is subject to monitoring and record keeping requirements in 40 CFR Part 265, Subpart AA or CC and the owner or operator complies with the periodic reporting requirements under 40 CFR Part 264, Subpart AA or CC that would apply to the device if the facility had final-permitted status, the owner or operator may elect to comply either with the monitoring, record keeping, and reporting requirements of this subpart, or with the monitoring, record keeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, record keeping, and reporting requirements of this subpart. The owner or operator shall identify which option has been selected in the Notification of Compliance Status required by section 63.152(b).

(i) Alternative means of compliance

(1) Option to comply with Part 65. Owners or operators of CMPU that are subject to section 63.100 may choose to comply with the provisions of 40 CFR Part 65 for all Group 1 and Group 2 process vents, Group 1 storage vessels, Group 1 transfer operations, and equipment that are subject to section 63.100, that are part of the CMPU. Other provisions applying to owners or operators who choose to comply with 40 CFR Part 65 are provided in 40 CFR 65.1. Group 1 and Group 2 wastewater streams, Group 2 transfer operations, Group 2 storage vessels, and in-process streams are not eligible to comply with 40 CFR Part 65 and must continue to comply with the requirements of this Subpart and Subpart F of this part.

(i) For Group 1 and Group 2 process vents, 40 CFR Part 65, Subpart D, satisfies the requirements of sections 63.102, 63.103, 63.112 through 63.118, 63.148, 63.151, and 63.152.

(ii) For Group 1 storage vessels, 40 CFR Part 65, Subpart C, satisfies the requirements of sections 63.102, 63.103, 63.112, 63.119 through 63.123, 63.148, 63.151, and 63.152.

(iii) [This section is not applicable to the permittee.]

(iv) For equipment, comply with section 65.160(g).

(2) Part 63, Subpart A. Owners or operators who choose to comply with 40 CFR Part 65 must also comply with the applicable general provisions of this Part 63 listed in table 1A of this subpart. All sections and paragraphs of Subpart A of this part that are not mentioned in table 1A of this subpart do not apply to owners or operators who choose to comply with 40 CFR Part 65, except that provisions required to be met prior to implementing 40 CFR Part 65 still apply. Owners and operators who choose to comply with a subpart of 40 CFR Part 65 must comply with 40 CFR Part 65, Subpart A.

1.b Section 63.111 Definitions.

All terms used in this subpart shall have the meaning given them in the Act, in subpart F of this part, and in this section, as follows.

Air oxidation reactor means a device or vessel in which air, or a combination of air and oxygen, is used as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds. Air oxidation reactor includes the product separator and any associated vacuum pump or steam jet.

Annual average concentration, as used in the wastewater provisions, means the flow-weighted annual average concentration, as determined according to the procedures specified in Sec. 63.144(b) of this subpart.

Annual average flow rate, as used in the wastewater provisions, means the annual average flow rate, as determined according to the procedures specified in Sec. 63.144(c).

Automated monitoring and recording system means any means of measuring values of monitored parameters and creating a hard copy or computer record of the measured values that does not require manual reading of monitoring instruments and manual transcription of data values. Automated monitoring and recording systems include, but are not limited to, computerized systems and strip charts.

Batch operation means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a unit operation within a chemical manufacturing process unit and distilled or reacted at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator. Boiler also means any industrial furnace as defined in 40 CFR 260.10.

By compound means by individual stream components, not carbon equivalents.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Chemical manufacturing process unit means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. A chemical manufacturing process unit consists of more than one unit operation. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or [[Page 175]] lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product.

Closed biological treatment process means a tank or surface impoundment where biological treatment occurs and air emissions from the treatment process are routed to either a control device by means of a closed vent system or to a fuel gas system by means of hard-piping. The tank or surface impoundment has a fixed roof, as defined in Sec. 63.**111** of this subpart, or a floating flexible membrane cover that meets the requirements specified in Sec. 63.134 of this subpart.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic hazardous air pollutant emissions.

Container, as used in the wastewater provisions, means any portable waste management unit that has a capacity greater than or equal to 0.1 m ³ in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in Sec. 63.152(f) or Sec. 63.152(g) of this subpart.

Continuous recorder means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minute or more frequent block average values.

Continuous seal means a seal that forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

Continuous vapor processing system means a vapor processing system that treats total organic compound vapors collected from tank trucks or railcars on a demand basis without intermediate accumulation in a vapor holder.

Control device means any combustion device, recovery device, or recapture device. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents, recapture devices are considered control devices but recovery devices are not considered control devices, and for a steam stripper, a primary condenser is not considered a control device.

Cover, as used in the wastewater provisions, means a device or system which is placed on or over a waste management unit containing wastewater or residuals so that the entire surface area is enclosed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed when not in use. Examples of covers include a fixed roof installed on a wastewater tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

Distillate receiver means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

Distillation unit means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Enhanced biological treatment system or enhanced biological treatment process means an aerated, thoroughly mixed treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles recovered biomass to the aeration unit. The mixed liquor volatile suspended solids (biomass) is greater than 1 kilogram per cubic meter throughout each aeration unit. The biomass is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation. A thoroughly mixed treatment unit is a unit that is designed and operated to approach or achieve uniform biomass distribution and organic compound concentration throughout the aeration unit by quickly dispersing the recycled biomass and the wastewater entering the unit.

External floating roof means a pontoon-type or double-deck-type cover that rests on the liquid surface in a storage vessel or waste management unit with no fixed roof.

Fill or filling means the introduction of organic hazardous air pollutant into a storage vessel or the introduction of a wastewater stream or residual into a waste management unit, but not necessarily to complete capacity.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere.

Fixed roof means a cover that is mounted on a waste management unit or storage vessel in a stationary manner and that does not move with fluctuations in liquid level.

Flame zone means the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope.

Floating roof means a cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and waste management unit or storage vessel wall.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices, or in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

Group 1 process vent means a process vent for which the vent stream flow rate is greater than or equal to 0.005 standard cubic meter per minute, the total organic HAP concentration is greater than or equal to 50 parts per million by volume, and the total resource effectiveness index value, calculated according to Sec. 63.115, is less than or equal to 1.0.

Group 2 process vent means a process vent for which the vent stream flow rate is less than 0.005 standard cubic meter per minute, the total organic HAP concentration is less than 50 parts per million by volume or the total resource effectiveness index value, calculated according to Sec. 63.115, is greater than 1.0.

Group 1 storage vessel means a storage vessel that meets the criteria for design storage capacity and stored-liquid maximum true vapor pressure specified in table 5 of this subpart for storage vessels at existing sources, and in table 6 of this subpart for storage vessels at new sources.

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

Group 1 transfer rack means a transfer rack that annually loads greater than or equal to 0.65 million liter of liquid products that contain organic hazardous air pollutants with a rack weighted average vapor pressure greater than or equal to 10.3 kilopascals.

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

Group 1 wastewater stream means a wastewater stream consisting of process wastewater as defined in Sec. 63.101 of subpart F at an existing or new source that meets the criteria for Group 1 status in Sec. 63.132(c) of this subpart for Table 9 compounds and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in Sec. 63.132(d) of this subpart for Table 8 compounds.

Group 2 wastewater stream means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

Halogenated vent stream or halogenated stream means a vent stream from a process vent or transfer operation determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms per hour or greater determined by the procedures presented in Sec. 63.115(d)(2)(v) of this subpart.

Halogens and hydrogen halides means hydrogen chloride (HCl), chlorine (Cl<INF>2</INF>), hydrogen bromide (HBr), bromine (Br<INF>2</INF>), and hydrogen fluoride (HF).

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as American National Standards Institute (ANSI) B31-3.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. The above energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

Individual drain system means the stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, conveying wastewater streams or residuals. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall runoff at a facility, and which is segregated from all other individual drain systems, is excluded from this definition.

Intermittent vapor processing system means a vapor processing system that employs an intermediate vapor holder to accumulate total organic compound vapors collected from tank trucks or railcars, and treats the accumulated vapors only during automatically controlled cycles.

Internal floating roof means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel or waste management unit that has a permanently affixed roof.

Junction box means a manhole or access point to a wastewater sewer line or a lift station.

Liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel or waste management unit and the floating roof. The seal is mounted continuously around the circumference of the vessel or unit.

Loading cycle means the time period from the beginning of filling a tank truck or railcar until flow to the control device ceases, as measured by the flow indicator.

Loading rack means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total organic HAP's in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at [[Page 178]] the ambient temperature, as determined: (1) In accordance with methods described in American Petroleum Institute Publication 2517, Evaporative Loss From External Floating-Roof Tanks (incorporated by reference as specified in Sec. 63.14 of subpart A of this part); or (2) As obtained from standard reference texts; or (3) As determined by the American Society for Testing and Materials Method D2879-83 or 96 (incorporated by reference as specified in Sec. 63.14 of subpart A of this part); or (4) Any other method approved by the Administrator.

Metallic shoe seal or mechanical shoe seal means metal sheets that are held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

Non-automated monitoring and recording system means manual reading of values measured by monitoring instruments and manual transcription of those values to create a record. Non-automated systems do not include strip charts.

Oil-water separator or organic-water separator means a waste management unit, generally a tank used to separate oil or organics from water. An oil-water or organic-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water or organic-water separator include, but are not limited to, an American Petroleum Institute separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

Open biological treatment process means a biological treatment process that is not a closed biological treatment process as defined in this section.

Operating permit means a permit required by 40 CFR part 70 or part 71.

Organic hazardous air pollutant or organic HAP means any of the chemicals listed in table 2 of subpart F of this part.

Organic monitoring device means a unit of equipment used to indicate the concentration level of organic compounds exiting a recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity.

Point of determination means each point where process wastewater exits the chemical manufacturing process unit. Note to definition for point of determination: The regulation allows determination of the characteristics of a wastewater stream (1) at the point of determination or (2) downstream of the point of determination if corrections are made for changes in flow rate and annual average concentration of Table 8 or Table 9 compounds as determined in Sec. 63.144 of this subpart. Such changes include losses by air emissions; reduction of annual average concentration or changes in flow rate by mixing with other water or wastewater streams; and reduction in flow rate or annual average concentration by treating or otherwise handling the wastewater stream to remove or destroy hazardous air pollutants.

Point of transfer means: (1) If the transfer is to an off-site location for control, the point where the conveyance crosses the property line; or (2) If the transfer is to an on-site location not owned or operated by the owner or operator of the source, the point where the conveyance enters the operation or equipment of the transferee.

Primary fuel means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water. Process unit has the same meaning as chemical manufacturing process unit as defined in this section.

Process wastewater stream means a stream that contains process wastewater as defined in Sec. 63.101 of subpart F of this part.

Product separator means phase separators, flash drums, knock-out drums, decanters, degassers, and condenser(s) [[Page 179]] including ejector-condenser(s) associated with a reactor or an air oxidation reactor.

Product tank, as used in the wastewater provisions, means a stationary unit that is designed to contain an accumulation of materials that are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. This term has the same meaning as a product storage vessel.

Product tank drawdown means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

Rack-weighted average partial pressure means the throughput weighted average of the average maximum true vapor pressure of liquids containing organic HAP transferred at a transfer rack. The rack-weighted average partial pressure shall be calculated using the equation below:

$$P = \frac{\sum P_i G_i}{\sum G_i}$$

Where:

P = Rack-weighted average partial pressure, kilopascals. Pi = Individual HAP maximum true vapor pressure, kilopascals, = Xi*P, where Xi is the mole fraction of compound i in the liquid. Gi = Yearly volume of each liquid that

contains organic HAP that is transferred at the rack, liters. i = Each liquid that contains HAP that is transferred at the rack.

Reactor means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed. Reactor includes the product separator and any associated vacuum pump or steam jet.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. For example, a recapture device may recover chemicals primarily for disposal. Recapture devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

Reference control technology for process vents means a combustion device or recapture device used to reduce organic hazardous air pollutant emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

Reference control technology for storage vessels means an internal floating roof meeting the specifications of Sec. 63.119(b) of this subpart, an external floating roof meeting the specifications of Sec. 63.119(c) of this subpart, an external floating roof converted to an internal floating roof meeting the specifications of Sec. 63.119(d) of this subpart, or a closed-vent system to a control device achieving 95-percent reduction in organic HAP emissions. For purposes of emissions averaging, these four technologies are considered equivalent.

Reference control technology for transfer racks means a combustion device, recapture device, or recovery device used to reduce organic hazardous air pollutants emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume; or a vapor balancing system.

Reference control technology for wastewater means the use of: (1) Controls specified in Sec. 63.133 through Sec. 63.137; (2) A steam stripper meeting the specifications of Sec. 63.138(d) of this subpart or any of the other alternative control measures specified in Sec. 63.138(b), (c), (e), (f), (g), or (h) of this subpart; and (3) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices or for noncombustion devices controlling air emissions from waste management units other than surface impoundments or containers) the organic hazardous air pollutants emissions in the vapor streams vented from wastewater tanks, oil-water separators, containers, surface impoundments, individual drain systems, and treatment processes (including the design steam stripper) managing wastewater.

Residual means any liquid or solid material containing Table 9 compounds that is removed from a wastewater stream by a waste management unit or treatment process that does not destroy organics (nondestructive unit). Examples of residuals from nondestructive wastewater management units are: the organic layer and bottom residue removed by a decanter or organic-water separator and the overheads from a steam stripper or air stripper. Examples of materials which are not residuals are: silt; mud; leaves; bottoms from a steam stripper or air stripper; and sludges, ash, or other materials removed from wastewater being treated by destructive devices such as biological treatment units and incinerators.

Secondary fuel means a fuel fired through a burner other than the primary fuel burner that provides supplementary heat in addition to the heat provided by the primary fuel.

Sewer line means a lateral, trunk line, branch line, or other conduit including, but not limited to, grates, trenches, etc., used to convey wastewater streams or residuals to a downstream waste management unit.

Simultaneous loading means, for a shared control device, loading of organic HAP materials from more than one transfer arm at the same time such that the beginning and ending times of loading cycles coincide or overlap and there is no interruption in vapor flow to the shared control device.

Single-seal system means a floating roof having one continuous seal that completely covers the space between the wall of the storage vessel and the edge of the floating roof. This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Specific gravity monitoring device means a unit of equipment used to monitor specific gravity and having a minimum accuracy of 0.02 specific gravity units.

Steam jet ejector means a steam nozzle which discharges a high- velocity jet across a suction chamber that is connected to the equipment to be evacuated.

Surface impoundment means a waste management unit which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids. A surface impoundment is used for the purpose of treating, storing, or disposing of wastewater or residuals, and is not an injection well. Examples of surface impoundments are equalization, settling, and aeration pits, ponds, and lagoons.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a chemical manufacturing process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

Table 8 compound means a compound listed in table 8 of this subpart.

Table 9 compound means a compound listed in table 9 of this subpart.

Temperature monitoring device means a unit of equipment used to monitor temperature and having a minimum accuracy of (a) 1 percent of the temperature being monitored expressed in degrees Celsius (deg.C) or (b) 0.5 degrees (deg.C), whichever is greater.

The 33/50 program means a voluntary pollution prevention initiative established and administered by the EPA to encourage emissions reductions of 17 chemicals emitted in large volumes by industrial facilities. The EPA Document Number 741-K-92-001 provides more information about the 33/50 program.

Total organic compounds or TOC, as used in the process vents provisions, means those compounds measured according to the procedures of Method 18 of 40 CFR part 60, appendix A.

Total resource effectiveness index value or TRE index value means a measure of the supplemental total resource requirement per unit reduction of organic HAP associated with a process vent stream, based on vent stream flow rate, emission rate of organic HAP, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equations given under Sec. 63.115 of this subpart.

Treatment process means a specific technique that removes or destroys the organics in a wastewater or residual stream such as a steam stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process applied to wastewater streams or residuals to comply with Sec. 63.138 of this subpart. Most treatment processes are conducted in tanks. Treatment processes are a subset of waste management units.

Vapor collection system, as used in the transfer provisions, means the equipment used to collect and transport organic HAP vapors displaced during the loading of tank trucks or railcars. This does not include the vapor collection system that is part of any tank truck or railcar vapor collection manifold system.

Vapor-mounted seal means a continuous seal that completely covers the annular space between the wall of the storage vessel or waste management unit and the edge of the floating roof and is mounted such that there is a vapor space between the stored liquid and the bottom of the seal.

Vent stream, as used in the process vent provisions, means the gas stream flowing through the process vent.

Waste management unit means the equipment, structure(s), and/or device(s) used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include: Wastewater tanks, surface impoundments, individual drain systems, and biological wastewater treatment units. Examples of equipment that may be waste management units include containers, air flotation units, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. If such equipment is used for recovery, then it is part of a chemical manufacturing process unit and is not a waste management unit.

Wastewater stream means a stream that contains only wastewater as defined in Sec. 63.101 of subpart F of this part.

Wastewater tank means a stationary waste management unit that is designed to contain an accumulation of wastewater or residuals and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. Wastewater tanks used for flow equalization are included in this definition.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g, flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

1.c Section 63.112 Emission standard.

(a) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the following equation:

EA = 0.02ΣS EPV1 + ΣS EPV2 + 0.05ΣS ES1 + ΣS ES2 + 0.02ΣS ETR1 + ΣS ETR2 + ΣS EWW1C + ΣS EWW2

where:

EA = Emission rate, megagrams per year, allowed for the source.

0.02ΣS EPV1 = Sum of the residual emissions, megagrams per year, from all Group 1 process vents, as defined in section 63.111 of this subpart.

ΣS EPV2 = Sum of the emissions, megagrams per year, from all Group 2 process vents as defined in section 63.111 of this subpart.

0.05ΣS ES1 = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in section 63.111 of this subpart.

ΣS ES2 = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in section 63.111 of this subpart.

0.02ΣS ETR1 = Sum of the residual emissions, megagrams per year, from all Group 1 transfer racks, as defined in section 63.111 of this subpart.

ΣS ETR2 = Sum of the emissions, megagrams per year, from all Group 2 transfer racks, as defined in section 63.111 of this subpart.

ΣS EWW1C = Sum of the residual emissions from all Group 1 wastewater streams, as defined in section 63.111 of this subpart. This term is calculated for each Group 1 stream according to the equation for EWW1C in section 63.150(g)(5)(i) of this subpart.

ΣS EWW2 = Sum of emissions from all Group 2 wastewater streams, as defined in section 63.111 of this subpart. The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point change or as the number of emission points in the source changes.

(b) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (a) of this section.

(c) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (a) of this section by following the procedures specified in paragraph (e) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (f) of this section for some emission points and the procedures specified in paragraph (e) of this section for all other emission points within the source.

(d) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (b) of this section only by following the procedures in paragraph (e) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.

(e) The owner or operator of an existing or new source may comply with the process vent provisions in sections 63.113 through 63.118 of this subpart, the storage vessel provisions in sections 63.119 through 63.123 of this subpart, the transfer operation provisions in sections 63.126 through 63.130 of this subpart, the wastewater provisions in sections 63.131 through 63.147 of this subpart, the leak inspection provisions in section 63.148, and the provisions in section 63.149 of this subpart.

(1) The owner or operator using this compliance approach shall also comply with the requirements of section 63.151 and section 63.152 of this subpart, as applicable.

(2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (a) of this section.

(3) When emissions of different kinds (e.g., emissions from process vents, transfer operations, storage vessels, process wastewater, and/or in-process equipment subject to section 63.149 of this subpart) are combined, and at least one of the emission streams would be classified as Group 1 in the absence of combination with other emission streams, the owner or operator shall comply with the requirements of either paragraph (e)(3)(i) or paragraph (e)(3)(ii) of this section.

(i) Comply with the applicable requirements of this subpart for each kind of emissions in the stream (e.g., the requirements in sections 63.113 through 63.118 of this Subpart G for process vents, and the requirements of sections 63.126 through 63.130 for transfer operations); or

(ii) Comply with the first set of requirements identified in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section which applies to any individual emission stream that is included in the combined stream, where either that emission stream would be classified as Group 1 in the absence of combination with other emission streams, or the owner chooses to consider that emission stream to be Group 1 for purposes of this paragraph. Compliance with the first applicable set of requirements identified in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section constitutes compliance with all other requirements in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section applicable to other types of emissions in the combined stream.

(A) The requirements of this subpart for Group 1 process vents, including applicable monitoring, record keeping, and reporting;

(B) The requirements of this subpart for Group 1 transfer racks, including applicable monitoring, record keeping, and reporting;

(C) The requirements of section 63.119(e) for control of emissions from Group 1 storage vessels, including monitoring, record keeping, and reporting;

(D) The requirements of section 63.139 for control devices used to control emissions from waste management units, including applicable monitoring, record keeping, and reporting; or

(E) The requirements of section 63.139 for closed vent systems for control of emissions from in-process equipment subject to section 63.149, including applicable monitoring, record keeping, and reporting.

(f) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under sections 63.113 through 63.148 of this subpart by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (a) of this section. The owner or operator using emissions averaging must meet the requirements in paragraphs (f)(1) and (f)(2) of this section.

(1) Calculate emission debits and credits for those emission points involved in the emissions average as specified in section 63.150 of this subpart; and

(2) Comply with the requirements of section 63.151 and section 63.152 of this subpart, as applicable.

(g) [This section is not applicable to the permittee.]

(h) Where the provisions of this subpart require a performance test, waiver of that requirement shall be addressed only as provided in section 63.103(b)(5) of Subpart F of this part.

1.d Section 63.113 Process vent provisions -- reference control technology.

(a) The owner or operator of a Group 1 process vent as defined in this subpart shall comply with the requirements of paragraph (a)(1), (2), or (3) of this section. The owner or operator who transfers a gas stream that has the characteristics specified in section 63.107 (b) through (h) or meets the criteria specified in section 63.107(i) to an off-site location or an on-site location not owned or operated by the owner or operator of the source for disposal shall comply with the requirements of paragraph (i) of this section.

(1) Reduce emissions of organic HAP using a flare.

(i) The flare shall comply with the requirements of section 63.11(b) of Subpart A of this part.

(ii) Halogenated vent streams, as defined in section 63.111 of this subpart, shall not be vented to a flare.

(2) Reduce emissions of total organic hazardous air pollutants by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen, and compliance can be determined by measuring either organic hazardous air pollutants or total organic carbon using the procedures in section 63.116 of this subpart.

(i) Compliance with paragraph (a)(2) of this section may be achieved by using any combination of combustion, recovery, and/or recapture devices, except that a recovery device may not be used to comply with paragraph (a)(2) of this section by reducing emissions of total organic hazardous air pollutants by 98 weight-percent, except as provided in paragraph (a)(2)(ii) of this section.

(ii) An owner or operator may use a recovery device, alone or in combination with one or more combustion or recapture devices, to reduce emissions of total organic hazardous air pollutants by 98 weight-percent if all the conditions of paragraphs (a)(2)(ii)(A) through (a)(2)(ii)(D) of this section are met.

(A) The recovery device (and any combustion device or recapture device which operates in combination with the recovery device to reduce emissions of total organic hazardous air pollutants by 98 weight-percent) was installed before the date of proposal of the subpart of this Part 63 that makes this Subpart G applicable to process vents in the chemical manufacturing process unit.

(B) The recovery device that will be used to reduce emissions of total organic hazardous air pollutants by 98 weight-percent is the last recovery device before emission to the atmosphere.

(C) The recovery device, alone or in combination with one or more combustion or recapture devices, is capable of reducing emissions of total organic hazardous air pollutants by 98 weight-percent, but is not capable of reliably reducing emissions of total organic hazardous air pollutants to a concentration of 20 parts per million by volume.

(D) If the owner or operator disposed of the recovered material, the recovery device would comply with the requirements of this subpart for recapture devices.

(3) Achieve and maintain a TRE index value greater than 1.0 at the outlet of the final recovery device, or prior to release of the vent stream to the atmosphere if no recovery device is present. If the TRE index value is greater than 1.0, the process vent shall comply with the provisions for a Group 2 process vent specified in either paragraph (d) or (e) of this section, whichever is applicable.

(b) [This section is not applicable to the permittee.]

(c) [This section is not applicable to the permittee.]

(d) The owner or operator of a Group 2 process vent having a flow rate greater than or equal to 0.005 standard cubic meter per minute, a HAP concentration greater than or equal to 50 parts per million by volume, and a TRE index value greater than 1.0 but less than or equal to 4.0 shall maintain a TRE index value greater than 1.0 and shall comply with the monitoring of recovery device parameters in section 63.114(b) or (c) of this subpart, the TRE index calculations of section 63.115 of this subpart, and the applicable reporting and record keeping provisions of sections 63.117 and 63.118 of this subpart. Such owner or operator is not subject to any other provisions of sections 63.114 through 63.118 of this subpart.

(e) The owner or operator of a Group 2 process vent with a TRE index value greater than 4.0 shall maintain a TRE index value greater than 4.0, comply with the provisions for calculation of a TRE index value in section 63.115 and the reporting and record keeping provisions in sections 63.117(b) and 63.118(c) and (h), and is not subject to monitoring or any other provisions of sections 63.114 through 63.118.

(f) The owner or operator of a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute shall maintain a flow rate less than 0.005 standard cubic meter per minute; comply with the Group determination procedures in section 63.115 (a), (b), and (e) of this subpart; and the reporting and record keeping requirements in section 63.117(c) of this subpart, section 63.118(d) of this subpart, and section 63.118(i) of this subpart; and is not subject to monitoring or any other provisions of sections 63.114 through 63.118 of this subpart.

(g) The owner or operator of a Group 2 process vent with a total organic HAP concentration less than 50 parts per million by volume shall maintain a total organic HAP concentration less than 50 parts per million by volume; comply with the Group determination procedures in section 63.115(a), (c), and (e); the reporting and record keeping requirements in sections 63.117(d) and 63.118(e) and (j); and is not subject to monitoring or any other provisions of sections 63.114 through 63.118.

(h) The owner or operator of a process vent complying with paragraph (a)(1) or (a)(2) of this section is not required to perform the group determination described in section 63.115 of this subpart.

(i) [This section is not applicable to the permittee.]

1.e Section 63.114 Process vent provisions -- monitoring requirements.

(a) Each owner or operator of a process vent that uses a combustion device to comply with the requirements in section 63.113 (a)(1) or (a)(2) of this subpart, or that uses a recovery device or recapture device to comply with the requirements in section 63.113(a)(2) of this subpart, shall install monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), (a)(4), or (a)(5) of this section, depending on the type of device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, the following monitoring equipment is required: A device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame.

(3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, the following monitoring equipment is required: a temperature monitoring device in the firebox equipped with a continuous recorder. This requirement does not apply to gas streams that are introduced with primary fuel or are used as the primary fuel.

(4) [This section is not applicable to the permittee.]

(5) Where a recovery device or recapture device is used to comply with the requirements of section 63.113(a)(2) of this subpart, the owner or operator shall utilize the appropriate monitoring device identified in paragraph (b), (b)(1), (b)(2), or (b)(3) of this section.

(b) Each owner or operator of a process vent with a TRE index value greater than 1.0 as specified under section 63.113(a)(3) or section63.113(d) of this subpart that uses one or more recovery devices shall install either an organic monitoring device equipped with a continuous recorder or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. Monitoring is not required for process vents with TRE index values greater than 4.0 as specified in section 63.113(e) of this subpart.

(1) Where an absorber is the final recovery device in the recovery system, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each equipped with a continuous recorder shall be used;

(2) Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used;

(3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration stream flow monitoring device having an accuracy of ±10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle shall be used.

(c) An owner or operator of a process vent may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in section 63.151(f) or section 63.152(e) of this subpart. Approval shall be requested if the owner or operator:

(1) Uses a combustion device other than an incinerator, boiler, process heater, or flare; or

(2) Maintains a TRE greater than 1.0 but less than or equal to 4.0 without a recovery device or with a recovery device other than the recovery devices listed in paragraphs (a) and (b) of this section; or

(3) Uses one of the combustion or recovery or recapture devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this section.

(d) The owner or operator of a process vent shall comply with paragraph (d)(1) or (2) of this section for any bypass line between the origin of the gas stream (i.e., at an air oxidation reactor, distillation unit, or reactor as identified in section 63.107(b)) and the point where the gas stream reaches the process vent, as described in section 63.107, that could divert the gas stream directly to the atmosphere. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph (d).

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in section 63.118(a)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert the gas stream to the atmosphere; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and the gas stream is not diverted through the bypass line.

(e) The owner or operator shall establish a range that indicates proper operation of the control or recovery device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the

information required in section 63.152(b) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment. The range may be based upon a prior performance test conducted for determining compliance with a regulation promulgated by the EPA, and the owner or operator is not required to conduct a performance test under section 63.116 of this subpart, if the prior performance test was conducted using the same methods specified in section 63.116 and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.

1.f Section 63.115 Process vent provisions -- methods and procedures for process vent group determination.

(a) For purposes of determining vent stream flow rate, total organic HAP or total organic carbon concentration or TRE index value, as specified under paragraph (b), (c), or (d) of this section, the sampling site shall be after the last recovery device (if any recovery devices are present) but prior to the inlet of any control device that is present and prior to release to the atmosphere.

(1) Method 1 or 1A of 40 CFR Part 60, Appendix A, as appropriate, shall be used for selection of the sampling site.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(b) To demonstrate that a vent stream flow rate is less than 0.005 standard cubic meter per minute in accordance with the Group 2 process vent definition of this subpart, the owner or operator shall measure flow rate by the following procedures:

(1) The sampling site shall be selected as specified in paragraph (a) of this section.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR Part 60, Appendix A, as appropriate.

(c) Each owner or operator seeking to demonstrate that a vent stream has an organic HAP concentration below 50 parts per million by volume in accordance with the Group 2 process vent definition of this subpart shall measure either total organic HAP or TOC concentration using the following procedures:

(1) The sampling site shall be selected as specified in paragraph (a) of this section.

(2) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used.

(3) Where Method 18 of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume concentration:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

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

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

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

where:

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

(B) The total organic HAP concentration (CHAP) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(4) Where Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume TOC concentration:

(i) Method 25A of 40 CFR part 60, appendix A, shall be used only if a single organic HAP compound is greater than 50 percent of total organic HAP, by volume, in the vent stream.

(ii) The vent stream composition may be determined by either process knowledge, test data collected using an appropriate EPA method, or a method or data validated according to the protocol in Method 301 of appendix A of this part. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions.

(iii) The organic HAP used as the calibration gas for Method 25A of 40 CFR part 60, appendix A shall be the single organic HAP compound present at greater than 50 percent of the total organic HAP by volume.

(iv) The span value for Method 25A of 40 CFR part 60, appendix A shall be 50 parts per million by volume.

(v) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A of 40 CFR part 60, appendix A is below 25 parts per million by volume to be considered a Group 2 vent with an organic HAP concentration below 50 parts per million by volume and to qualify for the low concentration exclusion in §§63.113(g) of this subpart.

(d) To determine the TRE index value, the owner or operator shall conduct a TRE determination and calculate the TRE index value according to the procedures in paragraph (d)(1) or (d)(2) of this section and the TRE equation in paragraph (d)(3) of this section.

(1) Engineering assessment may be used to determine vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate for the representative operating condition expected to yield the lowest TRE index value.

(i) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is greater than 4.0, then the owner or operator is not required to perform the measurements specified in paragraph (d)(2) of this section.

(ii) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is less than or equal to 4.0, then the owner or operator is required to perform the measurements specified in paragraph (d)(2) of this section for group determination or consider the process vent a Group 1 vent and comply with the emission reduction specified in §§63.113(a) of this subpart.

(iii) Engineering assessment includes, but is not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

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

(C) Maximum flow rate, TOC emission rate, organic HAP emission rate, or net heating value limit specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(3) Estimation of TOC or organic HAP concentrations based on saturation conditions,

(4) Estimation of maximum expected net heating value based on the vent stream concentration of each organic compound or, alternatively, as if all TOC in the vent stream were the compound with the highest heating value.

(E) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(2) Except as provided in paragraph (d)(1) of this section, vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate shall be measured and calculated according to the procedures in paragraphs (d)(2)(i) through (v) of this section and used as input to the TRE index value calculation in paragraph (d)(3) of this section.

(i) The vent stream volumetric flow rate (Qs), in standard cubic meters per minute at 20 degrees Celcius, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. If the vent stream tested passes through a final steam jet ejector and is not condensed, the vent stream volumetric flow shall be corrected to 2.3 percent moisture.

(ii) The molar composition of the vent stream, which is used to calculate net heating value, shall be determined using the following methods:

(A) Method 18 of 40 CFR part 60, appendix A to measure the concentration of each organic compound.

(B) American Society for Testing and Materials D1946—77 to measure the concentration of carbon monoxide and hydrogen.

(C) Method 4 of 40 CFR part 60, appendix A, to measure the moisture content of the vent stream.

(iii) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \left(\sum_{j=1}^{n} C_j H_j \right) \left(1 - B_{ws} \right)$$

where:

HT=Net heating value of the sample, megaJoule per standard cubic meter, where the net enthalpy per mole of vent stream is based on combustion at 25 °°C and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to one mole is 20 °°C, as in the definition of Qs (vent stream flow rate). Kl=Constant, 1.740××10−-7 (parts per million)−-1 (gram-mole per standard cubic meter) (megaJoule per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20 °°C. Bws=Water vapor content of the vent stream, proportion by volume; except that if the vent stream passes through a final steam jet and is not condensed, it shall be assumed that Bws=0.023 in order to correct to 2.3 percent moisture. Cj=Concentration on a dry basis of compound j in parts per million, as measured for all organic compounds by Method 18 of 40 CFR part 60, appendix A and measured for hydrogen and carbon monoxide by American Society for Testing and Materials D1946—77 as indicated in paragraph (d)(2)(ii) of this section. Hj=Net heat of combustion of compound j, kilocalorie per gram-mole, based on combustion at 25 °°C and 760 millimeters mercury. The heats of combustion of vent stream components shall be determined using American Society for Testing and Materials D2382—76 if published values are not available or cannot be calculated.

(iv) The emission rate of TOC (minus methane and ethane) (ETOC) and the emission rate of total organic HAP (EHAP) in the vent stream shall both be calculated using the following equation:

$$E = K_2 \left[\sum_{j=1}^{n} C_j M_j \right] Q_s$$

where:

E=Emission rate of TOC (minus methane and ethane) or emission rate of total organic HAP in the sample, kilograms per hour. K2=Constant, 2.494××10−-6 (parts per million)−-1 (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20°°C. Cj=Concentration on a dry basis of organic compound j in parts per million as measured by Method 18 of 40 CFR part 60, appendix A as indicated in paragraph (d)(2)(ii) of this section. If the TOC emission rate is being calculated, Cj includes all organic compounds measured minus methane and ethane; if the total organic HAP emission rate is being calculated, only organic HAP compounds listed in table 2 in subpart F of this part are included. Mj=Molecular weight of organic compound j, gram/gram-mole. Qs=Vent stream flow rate, dry standard cubic meter per minute, at a temperature of 20°°C.

(v) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.

(A) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume, by compound) shall be determined based on the following procedures:

(1) Process knowledge that no halogen or hydrogen halides are present in the process, or

(2) Applicable engineering assessment as discussed in paragraph (d)(1)(iii) of this section, or

(3) Concentration of organic compounds containing halogens measured by Method 18 of 40 CFR part 60, appendix A, or

(4) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(B) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 Q \left(\sum_{j=1}^{n} \sum_{i=1}^{m} C_j * L_{ji} * M_{ji} \right)$$

where:

E=mass of halogen atoms, dry basis, kilogram per hour. K2=Constant, 2.494××10−-6 (parts per million)−-1 (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20°°C. Cj=Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume. Mji=Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole. Lji=Number of atoms of halogen i in compound j of the gas stream. Q=Flow rate of gas stream, dry standard cubic meters per minute, determined according to paragraph (d)(1) or (d)(2)(i) of this section. j=Halogenated compound j in the gas stream. i=Halogen atom i in compound j of the gas stream. n=Number of halogenated compounds j in the gas stream. m=Number of different halogens i in each compound j of the gas stream.

(3) The owner or operator shall calculate the TRE index value of the vent stream using the equations and procedures in this paragraph.

(i) The equation for calculating the TRE index for a vent stream controlled by a flare or incinerator is as follows:

$$TRE = \frac{1}{E_{HAP}} \left[a + b(Q_s) + c(H_T) + d(E_{TOC}) \right]$$

where:

TRE=TRE index value. EHAP=Hourly emission rate of total organic HAP, kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section. Qs=Vent stream flow rate, standard cubic meters per minute, at a standard temperature of 20 °°C, as calculated in paragraph (d)(1) or (d)(2)(i) of this section. HT=Vent stream net heating value, megaJoules per standard cubic meter, as calculated in paragraph (d)(1) or (d)(2)(iii) of this section. ETOC=Emission rate of TOC (minus methane and ethane), kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section. a,b,c,d=Coefficients presented in table 1 of this subpart, selected in accordance with paragraphs (d)(3)(ii) and (iii) of this section.

(ii) The owner or operator of a nonhalogenated vent stream shall calculate the TRE index value based on the use of a flare, a thermal incinerator with 0 percent heat recovery, and a thermal incinerator with 70 percent heat recovery and shall select the lowest TRE index value. The owner or operator shall use the applicable coefficients in table 1 of this subpart for nonhalogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for nonhalogenated vent streams located within new sources.

(iii) The owner or operator of a halogenated vent stream shall calculate the TRE index value based on the use of a thermal incinerator with 0 percent heat recovery, and a scrubber. The owner or operator shall use the applicable coefficients in table 1 of this subpart for halogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for halogenated vent streams located within new sources.

(e) The owner or operator of a Group 2 process vent shall recalculate the TRE index value, flow, or organic hazardous air pollutants concentration for each process vent, as necessary to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE calculation was based.

(1) The TRE index value, flow rate, or organic HAP concentration shall be recalculated based on measurements of vent stream flow rate, TOC, and organic HAP concentrations, and heating values as specified in section 63.115 (a), (b), (c), and (d) of this subpart, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (d)(1) of this section.

(2) Where the recalculated TRE index value is less than or equal to 1.0, or less than or equal to 4.0 but greater than 1.0, the recalculated flow rate is greater than or equal to 0.005 standard cubic meter per minute, or the recalculated concentration is greater than or equal to 50 parts per million by volume, the owner or operator shall submit a report as specified in section 63.118 (g), (h), (i), or (j) of this subpart and shall comply with the appropriate provisions in section 63.113 of this subpart by the dates specified in section 63.100 of Subpart F of this part.

(f) Notwithstanding any other provisions of this subpart, in any case where a process vent includes one or more gas streams that are not from a source subject to this subpart (hereafter called "non-HON streams" for purposes of this paragraph), and one or more gas streams that meet the criteria in section 63.107(b) through (h) or the criteria in section 63.107(i) (hereafter called "HON streams" for purposes of this paragraph), the owner or operator may elect to comply with paragraphs (f)(1) through (3) of this section.

(1) The owner or operator may determine the characteristics (flow rate, total organic HAP concentration, and TRE index value) for each HON stream, or combination of HON streams, at a representative point as near as practical to, but before, the point at which it is combined with one or more non-HON streams.

(2) If one or more of the HON streams, or combinations of HON streams, has the characteristics (determined at the location specified in paragraph (f)(1) of this section) associated with a Group 1 process vent, the combined vent stream is a Group 1 process vent. Except as specified in paragraph (f)(3) of this section, if none of the HON streams, or combinations of HON streams, when determined at the location specified in paragraph (f)(1) of this section, has the characteristics associated with a Group 1 process vent, the combined vent stream is a Group 2 process vent regardless of the TRE index value determined at the location specified in §§63.115(a). If the combined vent stream is a Group 2 process vent as determined by the previous sentence, but one or more of the HON streams, or combinations of HON streams, has a TRE index value greater than 1 but less than or equal to 4, the combined vent stream is a process vent with a TRE index value greater than 1 but less than or equal to 4. In this case, the owner or operator shall monitor the combined vent stream as required by §§63.114(b).

(3) Paragraphs (f)(1) and (2) of this section are not intended to apply instead of any other subpart of this part. If another subpart of this part applies to one or more of the non-HON streams contributing to the combined vent stream, that subpart may impose emission control requirements such as, but not limited to, requiring the combined vent stream to be classified and controlled as a Group 1 process vent.

1.g Section 63.116 Process vent provisions -- performance test methods and procedures to determine compliance.

(a) When a flare is used to comply with section 63.113(a)(1), the owner or operator shall comply with paragraphs (a)(1) through (3) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.

(1) Conduct a visible emission test using the techniques specified in section 63.11(b)(4).

(2) Determine the net heating value of the gas being combusted using the techniques specified in section 63.11(b)(6).

(3) Determine the exit velocity using the techniques specified in either section 63.11(b)(7)(i) (and section 63.11(b)(7)(iii), where applicable) or section 63.11(b)(8), as appropriate.

(b) An owner or operator is not required to conduct a performance test when any control device specified in paragraphs (b)(1) through (b)(5) of this section is used.

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

(2) A boiler or process heater into which the gas stream is introduced with the primary fuel or is used as the primary fuel.

(3) A control device for which a performance test was conducted for determining compliance with a regulation promulgated by the EPA and the test was conducted using the same methods specified in this section and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.

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

(i) Has been issued a final permit under 40 CFR Part 270 and complies with the requirements of 40 CFR Part 266, Subpart H, or

(ii) Has certified compliance with the interim status requirements of 40 CFR Part 266, Subpart H.

(5) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR Part 270 and complies with the requirements of 40 CFR Part 264, Subpart O, or has certified compliance with the interim status requirements of 40 CFR Part 265, subpart O.

(c) Except as provided in paragraphs (a) and (b) of this section, an owner or operator using a control device to comply with the organic HAP concentration limit or percent reduction efficiency requirements in section 63.113(a)(2) of this subpart shall conduct a performance test using the procedures in paragraphs (c)(1) through (c)(4) of this section. The organic HAP concentration and percent reduction may be measured as either total organic HAP or as TOC minus methane and ethane according to the procedures specified.

(1) Method 1 or 1A of 40 CFR Part 60, Appendix A, as appropriate, shall be used for selection of the sampling sites.

(i) For determination of compliance with the 98 percent reduction of total organic HAP requirement of section 63.113(a)(2) of this subpart, sampling sites shall be located at the inlet of the control device as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section, and at the outlet of the control device.

(A) The control device inlet sampling site shall be located after the final product recovery device.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the

measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) For determination of compliance with the 20 parts per million by volume total organic HAP limit in section 63.113(a)(2) of this subpart, the sampling site shall be located at the outlet of the control device.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR Part 60, Appendix A, as appropriate.

(3) To determine compliance with the 20 parts per million by volume total organic HAP limit in section 63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of 40 CFR Part 60, Appendix A to measure either TOC minus methane and ethane or total organic HAP. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of Appendix A of this part, may be used. The following procedures shall be used to calculate parts per million by volume concentration, corrected to 3 percent oxygen:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

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

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

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

where:

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

(B) The total organic HAP concentration (CHAP) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

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

(A) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration (%O2d). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic HAP samples are taken.

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

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

Where:

Cc=Concentration of TOC or organic HAP corrected to 3 percent oxygen, dry basis, parts per million by volume. Cm=Concentration of TOC (minus methane and ethane) or organic HAP, dry basis, parts per million by volume. %02d=Concentration of oxygen, dry basis, percent by volume.

(4) To determine compliance with the 98 percent reduction requirement of §§63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A; alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part may be used. The following procedures shall be used to calculate percent reduction efficiency:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time such as 15 minute intervals during the run.

(ii) The mass rate of either TOC (minus methane and ethane) or total organic HAP (Ei, Eo) shall be computed.

(A) The following equations shall be used:

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

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

where:

Cij, Coj=Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume. Ei, Eo=Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour. Mij, Moj=Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole. Qi, Qo=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute. K2=Constant, 2.494 ×× 10—6 (parts per million)−-1 (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °°C.

(B) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by Method 18 of 40 CFR part 60, appendix A are summed using the equation in paragraph (c)(4)(ii)(A) of this section.

(C) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using the equation in paragraph (c)(4)(ii)(A) of this section. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iii) The percent reduction in TOC (minus methane and ethane) or total organic HAP shall be calculated as follows:

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

where:

R=Control efficiency of control device, percent. Ei=Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour. Eo=Mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

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

(d) [This section is not applicable to the permittee.]

(e) [This section is not applicable to the permittee.]

1.h Section 63.117 Process vent provisions -- reporting and record keeping requirements for group and TRE determinations and performance tests.

(a) Each owner or operator subject to the control provisions for Group 1 process vents in section 63.113(a) or the provisions for Group 2 process vents with a TRE index value greater than 1.0 but less than or equal to 4.0 in section 63.113(d) shall:

(1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(8) of this section, as applicable, and

(2) Include the data in paragraphs (a)(4) through (a)(8) of this section in the Notification of Compliance Status report as specified in section 63.152(b) of this subpart.

(3) If any subsequent TRE determinations or performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(8) of this section in the next Periodic Report as specified in section 63.152(c) of this subpart.

(4) Record and report the following when using a combustion device to achieve a 98 weight percent reduction in organic HAP or an organic HAP concentration of 20 parts per million by volume, as specified in section 63.113(a)(2) of this subpart:

(i) The parameter monitoring results for incinerators, catalytic incinerators, boilers or process heaters specified in table 3 of this subpart, and averaged over the same time period of the performance testing.

(ii) For an incinerator, the percent reduction of organic HAP or TOC achieved by the incinerator determined as specified in section 63.116(c) of this subpart, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in section 63.116(c) of this subpart at the outlet of the incinerator on a dry basis corrected to 3 percent oxygen.

(iii) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(iv) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the vent stream is introduced with combustion air or used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in section 63.116(c) at the outlet of the combustion device on a dry basis corrected to 3 percent oxygen.

(5) Record and report the following when using a flare to comply with section 63.113(a)(1) of this subpart:

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by section 63.116(a) of this subpart; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(6) [This section is not applicable to the permittee.]

(7) Record and report the following when achieving and maintaining a TRE index value greater than 1.0 but less than 4.0 as specified in section 63.113(a)(3) or section 63.113(d) of this subpart:

(i) The parameter monitoring results for absorbers, condensers, or carbon adsorbers, as specified in table 4 of this subpart, and averaged over the same time period of the measurements of vent stream flow rate and concentration used in the TRE determination (both measured while the vent stream is normally routed and constituted), and

(ii) The measurements and calculations performed to determine the TRE index value of the vent stream.

(8) [This section is not applicable to the permittee.]

(b) The owner or operator of a Group 2 process vent with a TRE index greater than 4.0 as specified in section 63.113(e) of this subpart, shall maintain records and submit as part of the Notification of Compliance Status specified in section 63.152 of this subpart, measurements, engineering assessments, and calculations performed to determine the TRE index value of the vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in section 63.115(d)(1) of this subpart.

(c) Each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on a flow rate less than 0.005 standard cubic meter per minute must submit to the Administrator the flow rate measurement using methods and procedures specified in section 63.115 (a) and (b) of this subpart with the Notification of Compliance Status specified in section 63.152 of this subpart.

(d) Each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on organic HAP or TOC concentration less than 50 parts per million by volume must submit to the Administrator an organic HAP or TOC concentration measurement using the methods and procedures specified in section 63.115 (a) and (c) of this subpart with the Notification of Compliance Status specified in section 63.152 of this subpart.

(e) If an owner or operator uses a control or recovery device other than those listed in tables 3 and 4 of this subpart or requests approval to monitor a parameter other than those specified in tables 3 and 4 of this subpart, the owner or operator shall submit a description of planned reporting and record keeping procedures as required under section 63.151(f) or section 63.152(e) of this subpart. The Administrator will specify appropriate reporting and record keeping requirements as part of the review of the permit application or by other appropriate means.

(f) For each parameter monitored according to tables 3 or 4 of this subpart or paragraph (e) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control or recovery device. In order to establish the range, the information required in section 63.152(b) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

1.i Section 63.118 Process vent provisions -- periodic reporting and record keeping requirements.

(a) Each owner or operator using a control device to comply with section 63.113 (a)(1) or (a)(2) of this subpart shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under section 63.114(a) of this subpart and listed in table 3 of this subpart or specified by the Administrator in accordance with section 63.114(c) and section 63.117(e) of this subpart. For flares, the hourly records and records of pilot flame outages specified in table 3 of this subpart shall be maintained in place of continuous records.

(2) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in section 63.152(f). For flares, records of the times and duration of all periods during which all pilot flames are absent shall be kept rather than daily averages.

(3) Hourly records of whether the flow indicator specified under section 63.114(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times and durations of all periods when the gas stream is diverted to the atmosphere or the monitor is not operating.

(4) Where a seal mechanism is used to comply with section 63.114(d)(2) of this subpart, hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.

(b) Each owner or operator using a recovery device or other means to achieve and maintain a TRE index value greater than 1.0 but less than 4.0 as specified in section 63.113(a)(3) or section 63.113(d) of this subpart shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under section 63.114(b) of this subpart and listed in table 4 of this subpart or specified by the Administrator in accordance with section 63.114(c) of this subpart and section 63.114(e) of this subpart and

(2) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in section 63.152(f). If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 4 of this subpart shall be kept instead of the daily averages.

(c) Each owner or operator subject to the provisions of this subpart and who elects to demonstrate compliance with the TRE index value greater than 4.0 under section 63.113(e) of this subpart or greater than 1.0 under section 63.113(a)(3) or section 63.113(d) of this subpart shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in section 63.115(e) of this subpart; and

(2) Any recalculation of the TRE index value pursuant to section 63.115(e) of this subpart.

(d) Each owner or operator who elects to comply by maintaining a flow rate less than 0.005 standard cubic meter per minute under section 63.113(f) of this subpart, shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in section 63.115(e) of this subpart that increase the vent stream flow rate,

(2) Any recalculation or measurement of the flow rate pursuant to section 63.115(e) of this subpart, and

(3) If the flow rate increases to 0.005 standard cubic meter per minute or greater as a result of the process change, the TRE determination performed according to the procedures of section 63.115(d) of this subpart.

(e) Each owner or operator who elects to comply by maintaining an organic HAP concentration less than 50 parts per million by volume organic HAP concentration under section 63.113(g) of this subpart shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in section 63.115(e) that increase the organic HAP concentration of the vent stream,

(2) Any recalculation or measurement of the concentration pursuant to section 63.115(e) of this subpart, and

(3) If the organic HAP concentration increases to 50 parts per million by volume or greater as a result of the process change, the TRE determination performed according to the procedures of section 63.115(d) of this subpart.

(f) Each owner or operator who elects to comply with the requirements of section 63.113 of this subpart shall submit to the Administrator Periodic Reports of the following recorded information according to the schedule in section 63.152 of this subpart.

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values recorded under paragraphs (a) and (b) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(2) For Group 1 points, reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data as defined in section 63.152(c)(2)(ii)(A) of this subpart.

(3) Reports of the times and durations of all periods recorded under paragraph (a)(3) of this section when the gas stream is diverted to the atmosphere through a bypass line.

(4) Reports of all periods recorded under paragraph (a)(4) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

(5) Reports of the times and durations of all periods recorded under paragraph (a)(2) of this section in which all pilot flames of a flare were absent.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (b)(2)(v) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(g) Whenever a process change, as defined in section 63.115(e) of this subpart, is made that causes a Group 2 process vent to become a Group 1 process vent, the owner or operator shall submit a report within 180 calendar days after the process change as specified in section 63.151(j) of this subpart. The report shall include:

(1) A description of the process change;

(2) The results of the recalculation of the flow rate, organic HAP concentration, and TRE index value required under section 63.115(e) of this subpart and recorded under paragraph (c), (d), or (e) of this section; and

(3) A statement that the owner or operator will comply with the provisions of section 63.113 of this subpart for Group 1 process vents by the dates specified in Subpart F of this part.

(h) [This section is not applicable to the permittee.]

(i) [This section is not applicable to the permittee.]

(j) [This section is not applicable to the permittee.]

(k) [This section is not applicable to the permittee.]

1.j Section 63.119 Storage vessel provisions -- reference control technology.

(a) For each storage vessel to which this subpart applies, the owner or operator shall comply with the requirements of paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this section according to the schedule provisions of section 63.100 of Subpart F of this part.

(1) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 for new sources) storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is less than 76.6 kilopascals, the owner or operator shall reduce hazardous air pollutants emissions to the atmosphere either by operating and maintaining a fixed roof and internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed vent system and control device, or routing the emissions to a process or a fuel gas system in accordance with the requirements in paragraph (b), (c), (d), (e), or (f) of this section, or equivalent as provided in section 63.121 of this subpart.

(2) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of this subpart for new sources) storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is greater than or equal to 76.6 kilopascals, the owner or operator shall operate and maintain a closed vent system and control device meeting the requirements specified in paragraph (e) of this section, or route the emissions to a process or a fuel gas system as specified in paragraph (f) of this section, or equivalent as provided in section 63.121 of this subpart.

(3) For each Group 2 storage vessel that is not part of an emissions average as described in section 63.150 of this subpart, the owner or operator shall comply with the record keeping requirement in section 63.123(a) of this subpart and is not required to comply with any other provisions in sections 63.119 through 63.123 of this subpart.

(4) For each Group 2 storage vessel that is part of an emissions average, the owner or operator shall comply with the emissions averaging provisions in section 63.150 of this subpart.

(b) The owner or operator who elects to use a fixed roof and an internal floating roof, as defined in section 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section.

Note: The intent of paragraphs (b)(1) and (b)(2) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

(1) The internal floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) During the initial fill.

(ii) After the vessel has been completely emptied and degassed.

(iii) When the vessel is completely emptied before being subsequently refilled.

(2) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(3) Each internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. Except as provided in paragraph (b)(3)(iv) of this section, the closure device shall consist of one of the devices listed in paragraph (b)(3)(i), (b)(3)(ii), or (b)(3)(iii) of this section.

(i) A liquid-mounted seal as defined in section 63.111 of this subpart.

(ii) A metallic shoe seal as defined in section 63.111 of this subpart.

(iii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor- mounted, but both must be continuous seals.

(iv) If the internal floating roof is equipped with a vapor-mounted seal as of December 31, 1992, the requirement for one of the seal options specified in paragraphs (b)(3)(i), (b)(3)(ii), and (b)(3)(iii) of this section does not apply until the earlier of the dates specified in paragraphs (b)(3)(iv)(A) and (b)(3)(iv)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(4) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(5) Except as provided in paragraph (b)(5)(viii) of this section, each internal floating roof shall meet the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section.

(i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the liquid surface.

(ii) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid. The cover or lid shall be equipped with a gasket.

(iii) Each penetration of the internal floating roof for the purposes of sampling shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(iv) Each automatic bleeder vent shall be gasketed.

(v) Each rim space vent shall be gasketed.

(vi) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(vii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(viii) If the internal floating roof does not meet any one of the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section as of December 31, 1992, the requirement for meeting those specifications does not apply until the earlier of the dates specified in paragraphs (b)(5)(viii)(A) and (b)(5)(viii)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(6) Each cover or lid on any opening in the internal floating roof shall be closed (i.e., no visible gaps), except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed. Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(c) The owner or operator who elects to use an external floating roof, as defined in section 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (c)(1) through (c)(4) of this section.

(1) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge.

(i) Except as provided in paragraph (c)(1)(iv) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

(ii) Except as provided in paragraph (c)(1)(v) of this section, the primary seal shall be either a metallic shoe seal or a liquid-mounted seal.

(iii) Except during the inspections required by §§63.120(b) of this subpart, both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion.

(iv) If the external floating roof is equipped with a liquid-mounted or metallic shoe primary seal as of December 31, 1992, the requirement for a secondary seal in paragraph (c)(1)(i) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(iv)(A) and (c)(1)(iv)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(v) If the external floating roof is equipped with a vapor-mounted primary seal and a secondary seal as of December 31, 1992, the requirement for a liquid-mounted or metallic shoe primary seal in paragraph (c)(1)(ii) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(v)(A) and (c)(1)(v)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(2) Each external floating roof shall meet the specifications listed in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.

(i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in the noncontact external floating roof shall provide a projection below the liquid surface except as provided in paragraph (c)(2)(xii) of this section.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal or lid which is to be maintained in a closed position (i.e., no visible gap) at all times except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed.

(iii) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(iv) Rim space vents are to be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(v) Automatic bleeder vents and rim space vents are to be gasketed.

(vi) Each roof drain that empties into the stored liquid is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(vii) Each unslotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

(viii) Each unslotted guide pole shall have on the end of the pole a gasketed cap which is closed at all times except when gauging the liquid level or taking liquid samples.

(ix) Each slotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

(x) Each slotted guide pole shall have a gasketed float or other device which closes off the liquid surface from the atmosphere.

(xi) Each gauge hatch/sample well shall have a gasketed cover which is closed at all times except when the hatch or well must be open for access.

(xii) If each opening in a noncontact external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents does not provide a projection below the liquid surface as of December 31, 1992, the requirement for providing these projections below the liquid surface does not apply until the earlier of the dates specified in paragraphs (c)(2)(xii)(A) and (c)(2)(xii)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

Note:

The intent of paragraphs (c)(3) and (c)(4) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

(3) The external floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (c)(3)(i) through (c)(3)(iii) of this section.

(i) During the initial fill.

(ii) After the vessel has been completely emptied and degassed.

(iii) When the vessel is completely emptied before being subsequently refilled.

(4) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(d) The owner or operator who elects to use an external floating roof converted to an internal floating roof (i.e., fixed roof installed above external floating roof) to comply with paragraph (a)(1) of this section shall comply with paragraphs (d)(1) and (d)(2) of this section.

(1) Comply with the requirements for internal floating roof vessels specified in paragraphs (b)(1), (2), and (3) of this section; and

(2) Comply with the requirements for deck fittings that are specified for external floating roof vessels in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.

(e) The owner or operator who elects to use a closed vent system and control device, as defined in section 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) or (a)(2) of this section shall comply with the requirements specified in paragraphs (e)(1) through (e)(5) of this section.

(1) Except as provided in paragraph (e)(2) of this section, the control device shall be designed and operated to reduce inlet emissions of total organic HAP by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of §§63.11(b) of subpart A of this part.

(2) If the owner or operator can demonstrate that a control device installed on a storage vessel on or before December 31, 1992 is designed to reduce inlet emissions of total organic HAP by greater than or equal to 90 percent but less than 95 percent, then the control device is required to be operated to reduce inlet emissions of total organic HAP by 90 percent or greater.

(3) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraph (e)(1) or (e)(2) of this section, as applicable, shall not exceed 240 hours per year.

(4) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during periods of planned routine maintenance.

(5) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during a control system malfunction.

(6) An owner or operator may use a combination of control devices to achieve the required reduction of total organic hazardous air pollutants specified in paragraph (e)(1) of this section. An owner or operator may use a combination of control devices installed on a storage vessel on or before December 31, 1992 to achieve the required reduction of total organic hazardous air pollutants specified in paragraph (e)(2) of this section.

(f) The owner or operator who elects to route emissions to a fuel gas system or to a process, as defined in section 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) or (a)(2) of this section shall comply with the requirements in paragraphs (f)(1) through (f)(3) of this section, as applicable.

(1) If emissions are routed to a fuel gas system, there is no requirement to conduct a performance test or design evaluation. If emissions are routed to a process, the organic hazardous air pollutants in the emissions shall predominantly meet one of, or a combination of, the ends specified in paragraphs (f)(1)(i) through (f)(1)(iv) of this section. The owner or operator shall comply with the compliance demonstration requirements in §§63.120(f).

(i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;

(ii) Transformed by chemical reaction into materials that are not organic hazardous air pollutants;

(iii) Incorporated into a product; and/or

(iv) Recovered.

(2) If the emissions are conveyed by a system other than hard-piping, any conveyance system operated under positive pressure shall be subject to the requirements of §§63.148 of this subpart.

(3) The fuel gas system or process shall be operating at all times when organic hazardous air pollutants emissions are routed to it except as provided in §§63.102(a)(1) of subpart F of this part and in paragraphs (f)(3)(i) through (f)(3)(iii) of this section. Whenever the owner or operator by-passes the fuel gas system or process, the owner or operator shall comply with the recordkeeping requirement in §§63.123(h) of this subpart. Bypassing is permitted if the owner or operator complies with one or more of the conditions specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) The liquid level in the storage vessel is not increased;

(ii) The emissions are routed through a closed-vent system to a control device complying with §§63.119(e) of this subpart; or

(iii) The total aggregate amount of time during which the emissions by-pass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except start-ups/shutdowns/malfunctions or product changeovers of flexible operation units and periods when the storage vessel has been emptied and degassed), does not exceed 240 hours.

1.k Section 63.120 Storage vessel provisions -- procedures to determine compliance.

(a) To demonstrate compliance with section 63.119(b) of this subpart (storage vessel equipped with a fixed roof and internal floating roof) or with section 63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(7) of this section.

(1) The owner or operator shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), according to the schedule specified in paragraphs (a)(2) and (a)(3) of this section.

(2) For vessels equipped with a single-seal system, the owner or operator shall perform the inspections specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) Visually inspect the internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in section 63.100 of Subpart F of this part.

(ii) Visually inspect the internal floating roof, the seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed, and at least once every 10 years after the compliance date specified in section 63.100 of Subpart F of this part.

(3) For vessels equipped with a double-seal system as specified in section 63.119(b)(3)(iii) of this subpart, the owner or operator shall perform either the inspection required in paragraph (a)(3)(i) of this section or the inspections required in both paragraphs (a)(3)(ii) and (a)(3)(iii) of this section.

(i) The owner or operator shall visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed and at least once every 5 years after the compliance date specified in section 63.100 of Subpart F of this part; or

(ii) The owner or operator shall visually inspect the internal floating roof and the secondary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in section 63.100 of Subpart F of this part, and

(iii) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the vessel is emptied and degassed and at least once every 10 years after the compliance date specified in section 63.100 of Subpart F of this part.

(4) If during the inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section, the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached; or there are holes or tears in the seal fabric; or there are visible gaps between the seal and the wall of the storage vessel, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

(5) Except as provided in paragraph (a)(6) of this section, for all the inspections required by paragraphs (a)(2)(ii), (a)(3)(i), and (a)(3)(iii) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to the refilling of each storage vessel to afford the Administrator the opportunity to have an observer present.

(6) If the inspection required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel, the owner or operator shall notify the Administrator at least 7 calendar days prior to the refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to refilling.

(7) If during the inspections required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section, the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with organic HAP.

(b) To demonstrate compliance with section 63.119(c) of this subpart (storage vessel equipped with an external floating roof), the owner or operator shall comply with the requirements specified in paragraphs (b)(1) through (b)(10) of this section.

(1) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel, and the secondary seal and the wall of the storage vessel according to the frequency specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the primary seal shall be performed during the hydrostatic testing of the vessel or by the compliance date specified in §§63.100 of subpart F of this part, whichever occurs last, and at least once every 5 years thereafter.

(ii) For an external floating roof vessel equipped with a liquid-mounted or metallic shoe primary seal and without a secondary seal as provided for in §§63.119(c)(1)(iv) of this subpart, measurements of gaps between the vessel wall and the primary seal shall be performed by the compliance date specified in §§63.100 of subpart F of this part and at least once per year thereafter, until a secondary seal is installed. When a secondary seal is installed above the primary seal, measurements of gaps between the vessel wall and both the primary and secondary seals shall be performed within 90 calendar days of installation of the secondary seal, and according to the frequency specified in paragraphs (b)(1)(i) and (b)(1)(iii) of this section thereafter.

(iii) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the secondary seal shall be performed by the compliance date specified in §§63.100 of subpart F of this part and at least once per year thereafter.

(iv) If any storage vessel ceases to store organic HAP for a period of 1 year or more, or if the maximum true vapor pressure of the total organic HAP's in the stored liquid falls below the values defining Group 1 storage vessels specified in table 5 or table 6 of this subpart for a period of 1 year or more, measurements of gaps between the vessel wall and the primary seal, and gaps between the vessel wall and the secondary seal shall be performed within 90 calendar days of the vessel being refilled with organic HAP.

(2) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine gap widths and gap areas in the primary and secondary seals (seal gaps) individually by the procedures described in paragraphs (b)(2)(i) through (b)(2)(iii) of this section.

(i) Seal gaps, if any, shall be measured at one or more floating roof levels when the roof is not resting on the roof leg supports.

(ii) Seal gaps, if any, shall be measured around the entire circumference of the vessel in each place where an 0.32 centimeter (1/8 inch) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel. The circumferential distance of each such location shall also be measured.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.

(3) The owner or operator shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters.

(4) The owner or operator shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of primary seal gaps as required by paragraph (b)(1)(i) and (b)(1)(ii) of this section.

(5) The primary seal shall meet the additional requirements specified in paragraphs (b)(5)(i) and (b)(5)(ii) of this section.

(i) Where a metallic shoe seal is in use, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface.

(ii) There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(6) The secondary seal shall meet the additional requirements specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.

(i) The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in paragraph (b)(4) of this section.

(ii) There shall be no holes, tears, or other openings in the seal or seal fabric.

(7) If the owner or operator determines that it is unsafe to perform the seal gap measurements required in paragraphs (b)(1) and (b)(2) of this section or to inspect the vessel to determine compliance with paragraphs (b)(5) and (b)(6) of this section because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (b)(7)(i) or (b)(7)(ii) of this section.

(i) The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or

(ii) The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe. If the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the vessel will be emptied as soon as practical.

(8) The owner or operator shall repair conditions that do not meet requirements listed in paragraphs (b)(3), (b)(4), (b)(5), and (b)(6) of this section (i.e., failures) no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service no later than 45 calendar days after identification. If during seal gap measurements required in paragraph (b)(1) and (b)(2) of this section or during inspections necessary to determine compliance with paragraphs (b)(5) and (b)(6) of this section a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

(9) The owner or operator shall notify the Administrator in writing 30 calendar days in advance of any gap measurements required by paragraph (b)(1) or (b)(2) of this section to afford the Administrator the opportunity to have an observer present.

(10) The owner or operator shall visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.

(ii) Except as provided in paragraph (b)(10)(iii) of this section, for all the inspections required by paragraph (b)(10) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.

(iii) If the inspection required by paragraph (b)(10) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.

(c) To demonstrate compliance with section 63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements of paragraph (a) of this section.

(d) To demonstrate compliance with section 63.119(e) of this subpart (storage vessel equipped with a closed vent system and control device) using a control device other than a flare, the owner or operator shall comply with the requirements in paragraphs (d)(1) through (d)(7) of this section, except as provided in paragraph (d)(8) of this section.

(1) The owner or operator shall either prepare a design evaluation, which includes the information specified in paragraph (d)(1)(i) of this section, or submit the results of a performance test as described in paragraph (d)(1)(ii) of this section.

(i) The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content under varying liquid level conditions, and the information specified in paragraphs (d)(1)(i)(A) through (d)(1)(i)(E) of this section, as applicable.

(A) If the control device receives vapors, gases or liquids, other than fuels, from emission points other than storage vessels subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

(B) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °°C is used to meet the emission reduction requirement specified in §§63.119 (e)(1) or (e)(2), as applicable, documentation that those conditions exist is sufficient to meet the requirements of paragraph (d)(1)(i) of this section.

(C) Except as provided in paragraph (d)(1)(i)(B) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.

(D) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.

(E) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(ii) If the control device used to comply with §§63.119(e) of this subpart is also used to comply with §§63.113(a)(2), §§63.126(b)(1), or §§63.139(c) of this subpart, the performance test required by §§63.116(c), §§63.128(a), or §§63.139(d)(1) of this subpart is acceptable to demonstrate compliance with §§63.119(e) of this subpart. The owner or

operator is not required to prepare a design evaluation for the control device as described in paragraph (d)(1)(i) of this section, if the performance tests meets the criteria specified in paragraphs (d)(1)(ii)(A) and (d)(1)(ii)(B) of this section.

(A) The performance test demonstrates that the control device achieves greater than or equal to the required control efficiency specified in §§63.119 (e)(1) or (e)(2) of this subpart, as applicable; and

(B) The performance test is submitted as part of the Notification of Compliance Status required by §§63.151(b) of this subpart.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by §§63.151 (b) of this subpart, a monitoring plan containing the information specified in paragraph (d)(2)(i) of this section and in either (d)(2)(ii) or (d)(2)(iii) of this section.

(i) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed (e.g., when the liquid level in the storage vessel is being raised); and either

(ii) The documentation specified in paragraph (d)(1)(i) of this section, if the owner or operator elects to prepare a design evaluation; or

(iii) The information specified in paragraph (d)(2)(iii) (A) and (B) of this section if the owner or operator elects to submit the results of a performance test.

(A) Identification of the storage vessel and control device for which the performance test will be submitted, and

(B) Identification of the emission point(s) that share the control device with the storage vessel and for which the performance test will be conducted.

(3) The owner or operator shall submit, as part of the Notification of Compliance Status required by §§63.152(b) of this subpart, the information specified in paragraphs (d)(3)(i) and, if applicable, (d)(3)(ii) of this section.

(i) The operating range for each monitoring parameter identified in the monitoring plan. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

(ii) Results of the performance test described in paragraph (d)(1)(ii) of this section.

(4) The owner or operator shall demonstrate compliance with the requirements of §§63.119(e)(3) of this subpart (planned routine maintenance of a control device, during which the control device does not meet the specifications of §§63.119 (e)(1) or (e)(2) of this subpart, as applicable, shall not exceed 240 hours per year) by including in each Periodic Report required by §§63.152(c) of this subpart the information specified in §§63.122(g)(1) of this subpart.

(5) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in §§63.152(b) of this subpart or in the operating permit and shall operate and maintain the control device such that the monitored parameters remain within the ranges specified in the Notification of Compliance Status.

(6) Except as provided in paragraph (d)(7) of this section, each closed vent system shall be inspected as specified in §§63.148 of this subpart. The initial and annual inspections required by §§63.148(b) of this subpart shall be done during filling of the storage vessel.

(7) For any fixed roof tank and closed vent system that are operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in §§63.148 of this subpart.

(8) A design evaluation or performance test is not required, if the owner or operator uses a combustion device meeting the criteria in paragraph (d)(8)(i), (d)(8)(ii), (d)(8)(iii), or (d)(8)(iv) of this section.

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

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

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(iii) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(iv) A boiler or process heater into which the vent stream is introduced with the primary fuel.

(e) To demonstrate compliance with section 63.119(e) of this subpart (storage vessel equipped with a closed vent system and control device) using a flare, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(6) of this section.

(1) The owner or operator shall perform the compliance determination specified in section 63.11(b) of Subpart A of this part.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by section 63.152(b) of this subpart, the information specified in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by paragraph (e)(1) of this section; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(3) The owner or operator shall demonstrate compliance with the requirements of section 63.119(e)(3) of this subpart (planned routine maintenance of a flare, during which the flare does not meet the specifications of section 63.119(e)(1) of this subpart, shall not exceed 240 hours per year) by including in each Periodic Report required by section 63.152(c) of this subpart the information specified in section 63.122(g)(1) of this subpart.

(4) The owner or operator shall continue to meet the general control device requirements specified in section 63.11(b) of Subpart A of this part.

(5) Except as provided in paragraph (e)(6) of this section, each closed vent system shall be inspected as specified in section 63.148 of this subpart. The inspections required to be performed in accordance with section 63.148(c) of this subpart shall be done during filling of the storage vessel.

(6) For any fixed roof tank and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in section 63.148 of this subpart.

(f) [This section is not applicable to the permittee.]

1.l Section 63.121 Storage vessel provisions -- alternative means of emission limitation.
[This section is not applicable to the permittee.]

1.m Section 63.122 Storage vessel provisions- reporting.

(a) For each Group 1 storage vessel, the owner or operator shall comply with the requirements of paragraphs (a)(1) through (a)(5) of this section.

(1) The owner or operator shall submit an Initial Notification as required by section 63.151(b) of this subpart.

(2) [Reserved]

(3) The owner or operator shall submit a Notification of Compliance Status as required by section 63.152(b) of this subpart and shall submit as part of the Notification of Compliance Status the information specified in paragraph (c) of this section.

(4) The owner or operator shall submit Periodic Reports as required by section 63.152(c) of this subpart and shall submit as part of the Periodic Reports the information specified in paragraphs (d), (e), (f), and (g) of this section.

(5) The owner or operator shall submit, as applicable, other reports as required by section 63.152(d) of this subpart, containing the information specified in paragraph (h) of this section.

(b) An owner or operator who elects to comply with section 63.119(e) of this subpart by using a closed vent system and a control device other than a flare shall submit, as part of the Monitoring Plan, the information specified in section 63.120(d)(2)(i) of this subpart and the information specified in either section 63.120(d)(2)(ii) of this subpart or section 63.120(d)(2)(iii) of this subpart.

(c) An owner or operator who elects to comply with section 63.119(e) of this subpart by using a closed vent system and a control device shall submit, as part of the Notification of Compliance Status required by section 63.152(b) of this subpart, the information specified in either paragraph (c)(1) or (c)(2) of this section. An owner or operator who elects to comply with section 63.119(f) of this subpart by routing emissions to a process or to a fuel gas system shall submit, as part of the Notification of Compliance Status required by section 63.152(b) of this subpart, the information specified in paragraph (c)(3) of this section.

(1) If a control device other than a flare is used, the owner or operator shall submit the information specified in section 63.120(d)(3)(i) and, if applicable, (d)(3)(ii) of this subpart.

(2) If a flare is used, the owner or operator shall submit the information specified in section 63.120(e)(2)(i), (e)(2)(ii), and (e)(2)(iii) of this subpart.

(3) If emissions are routed to a process, the owner or operator shall submit the information specified in section 63.120(f). If emissions are routed to a fuel gas system, the owner or operator shall submit a statement that the emission stream is connected to the fuel gas system and whether the conveyance system is subject to the requirements of section 63.148.

(d) An owner or operator who elects to comply with section 63.119(b) of this subpart by using a fixed roof and an internal floating roof or with section 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall submit, as part of the Periodic Report required under section 63.152(c) of this subpart, the results of each inspection conducted in accordance with section 63.120(a) of this subpart in which a failure is detected in the control equipment.

(1) For vessels for which annual inspections are required under section 63.120 (a)(2)(i) or (a)(3)(ii) of this subpart, the specifications and requirements listed in paragraphs (d)(1)(i) through (d)(1)(iii) of this section apply.

(i) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

(ii) Except as provided in paragraph (d)(1)(iii) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.

(iii) If an extension is utilized in accordance with section 63.120(a)(4) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in section 63.120(a)(4) of this subpart; and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(2) For vessels for which inspections are required under section 63.120 (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this subpart, the specifications and requirements listed in paragraphs (d)(2)(i) and (d)(2)(ii) of this section apply.

(i) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) Each Periodic Report required under section 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(e) [This section is not applicable to the permittee.]

(f) An owner or operator who elects to comply with section 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (d) of this section.

(g) An owner or operator who elects to comply with section 63.119(e) of this subpart by installing a closed vent system and control device shall submit, as part of the next Periodic Report required by section 63.152(c) of this subpart, the information specified in paragraphs (g)(1) through (g)(3) of this section.

(1) As required by section 63.120(d)(4) and section 63.120(e)(3) of this subpart, the Periodic Report shall include the information specified in paragraphs (g)(1)(i) and (g)(1)(ii) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of section 63.119 (e)(1) or (e)(2) of this subpart, as applicable.

(i) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(ii) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of section 63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to planned routine maintenance.

(2) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status in accordance with section 63.120(d)(3)(i) of this subpart. The description shall include the information specified in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(i) Identification of the control device for which the measured parameters were outside of the established ranges, and

(ii) Cause for the measured parameters to be outside of the established ranges.

(3) If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in section 63.11(b) of Subpart A of this part and shall include the information specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this section.

(i) Identification of the flare which does not meet the general requirements specified in section 63.11(b) of Subpart A of this part, and

(ii) Reason the flare did not meet the general requirements specified in section 63.11(b) of Subpart A of this part.

(h) An owner or operator who elects to comply with section 63.119 (b), (c), or (d) of this subpart shall submit, as applicable, the reports specified in paragraphs (h)(1) and (h)(2) of this section.

(1) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the refilling of a storage vessel that has been emptied and degassed.

(i) If the storage vessel is equipped with an internal floating roof as specified in section 63.119(b) of this subpart, the notification shall meet the requirements of either section 63.120 (a)(5) or (a)(6) of this subpart, as applicable.

(ii) If the storage vessel is equipped with an external floating roof as specified in section 63.119(c) of this subpart, the notification shall meet the requirements of either section 63.120 (b)(10)(ii) or (b)(10)(iii) of this subpart, as applicable.

(iii) If the storage vessel is equipped with an external floating roof converted into an internal floating roof as specified in section 63.119(d) of this subpart, the notification shall meet the requirements of either section 63.120 (a)(5) or (a)(6) of this subpart, as applicable.

(2) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof as specified in section 63.119(c) of this subpart shall notify the Administrator of any seal gap measurements. This notification shall meet the requirements of section 63.120(b)(9) of this subpart.

1.n Section 63.123 Storage vessel provisions -- record keeping.

(a) Each owner or operator of a Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. For each Group 2 storage vessel, the owner or operator is not required to comply with any other provisions of sections 63.119 through 63.123 of this subpart other than those required by this paragraph unless such vessel is part of an emissions average as described in section 63.150 of this subpart.

(b) [Reserved]

(c) An owner or operator who elects to comply with section 63.119(b) of this subpart shall keep a record that each inspection required by section 63.120(a) of this subpart was performed.

(d) An owner or operator who elects to comply with section 63.119(c) of this subpart shall keep records describing the results of each seal gap measurement made in accordance with section 63.120(b) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in section 63.120(b) (3) and (4) of this subpart.

(e) An owner or operator who elects to comply with section 63.119(d) of this subpart shall keep a record that each inspection required by section 63.120 (a) and (c) of this subpart was performed.

(f) An owner or operator who elects to comply with section 63.119(e) of this subpart shall keep in a readily accessible location the records specified in paragraphs (f)(1) and (f)(2) of this section.

(1) A record of the measured values of the parameters monitored in accordance with section 63.120(d)(5) of this subpart.

(2) A record of the planned routine maintenance performed on the control device including the duration of each time the control device does not meet the specifications of section 63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to the planned routine maintenance. Such a record shall include the information specified in paragraphs (f)(2)(i) and (f)(2)(ii) of this section.

(i) The first time of day and date the requirements of section 63.119 (e)(1) or (e)(2) of this subpart, as applicable, were not met at the beginning of the planned routine maintenance, and

(ii) The first time of day and date the requirements of section 63.119 (e)(1) or (e)(2) of this subpart, as applicable, were met at the conclusion of the planned routine maintenance.

(g) An owner or operator who elects to utilize an extension in emptying a storage vessel in accordance with section 63.120 (a)(4), (b)(7)(ii), or (b)(8) of this subpart shall keep in a readily accessible location, the documentation specified in section 63.120 (a)(4), (b)(7)(ii), or (b)(8), as applicable.

(h) An owner or operator who uses the by-pass provisions of section 63.119(f)(3) of this subpart shall keep in a readily accessible location the records specified in paragraphs (h)(1) through (h)(3) of this section.

(1) The reason it was necessary to by-pass the process equipment or fuel gas system;

(2) The duration of the period when the process equipment or fuel gas system was by-passed;

(3) Documentation or certification of compliance with the applicable provisions of section 63.119(f)(3)(i) through section 63.119(f)(3)(iii).

1.o Section 63.126 Transfer operations provisions -- reference control technology.

(a) For each Group 1 transfer rack the owner or operator shall equip each transfer rack with a vapor collection system and control device.

(1) Each vapor collection system shall be designed and operated to collect the organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading, and to route the collected hazardous air pollutants vapors to a process, or to a fuel gas system, or to a control device as provided in paragraph (b) of this section.

(2) Each vapor collection system shall be designed and operated such that organic HAP vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.

(3) Whenever organic hazardous air pollutants emissions are vented to a process, fuel gas system, or control device used to comply with the provisions of this subpart, the process, fuel gas system, or control device shall be operating.

(b) For each Group 1 transfer rack the owner or operator shall comply with paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section.

(1) Use a control device to reduce emissions of total organic hazardous air pollutants by 98 weight-percent or to an exit concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen. If a boiler or process heater is used to comply with the percent reduction requirement, then the vent stream shall be introduced into the flame zone of such a device. Compliance may be achieved by using any combination of combustion, recovery, and/or recapture devices.

(2) Reduce emissions of organic HAP's using a flare.

(i) The flare shall comply with the requirements of section 63.11(b) of Subpart A of this part.

(ii) Halogenated vent streams, as defined in section 63.111 of this subpart, shall not be vented to a flare.

(3) Reduce emissions of organic hazardous air pollutants using a vapor balancing system designed and operated to collect organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading; and to route the collected hazardous air pollutants vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected to a common header, or to compress and route to a process collected hazardous air pollutants vapors.

(4) Route emissions of organic hazardous air pollutants to a fuel gas system or to a process where the organic hazardous air pollutants in the emissions shall predominantly meet one of, or a combination of, the ends specified in paragraphs (b)(4)(i) through (b)(4)(iv) of this section.

(i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;

(ii) Transformed by chemical reaction into materials that are not organic hazardous air pollutants;

(iii) Incorporated into a product; and/or

(iv) Recovered.

(c) For each Group 2 transfer rack, the owner or operator shall maintain records as required in section 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack.

(d) [This section is not applicable to the permittee.]

(e) For each Group 1 transfer rack the owner or operator shall load organic HAP's into only tank trucks and railcars which:

(1) Have a current certification in accordance with the U. S. Department of Transportation pressure test requirements of 49 CFR Part 180 for tank trucks and 49 CFR 173.31 for railcars; or

(2) Have been demonstrated to be vapor-tight within the preceding 12 months, as determined by the procedures in section 63.128(f) of this subpart. Vapor-tight means that the truck or railcar tank will sustain a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals.

(f) The owner or operator of a transfer rack subject to the provisions of this subpart shall load organic HAP's to only tank trucks or railcars equipped with vapor collection equipment that is compatible with the transfer rack's vapor collection system.

(g) The owner or operator of a transfer rack subject to this subpart shall load organic HAP's to only tank trucks or railcars whose collection systems are connected to the transfer rack's vapor collection systems.

(h) The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure-relief device in the transfer rack's vapor collection system or in the organic hazardous air pollutants loading equipment of each tank truck or railcar shall begin to open during loading. Pressure relief devices needed for safety purposes are not subject to this paragraph.

(i) Each valve in the vent system that would divert the vent stream to the atmosphere, either directly or indirectly, shall be secured in a non-diverting position using a carseal or a lock-and-key type configuration, or shall be equipped with a flow indicator. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief devices needed for safety purposes is not subject to this paragraph.

1.p Section 63.127 Transfer operations provisions -- monitoring requirements.

(a) Each owner or operator of a Group 1 transfer rack equipped with a combustion device used to comply with the 98 percent total organic hazardous air pollutants reduction or 20 parts per million by volume outlet concentration requirements in section 63.126(b)(1) of this subpart shall install, calibrate, maintain, and operate according to the manufacturers' specifications (or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately) the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, as appropriate.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, infrared sensor, or an ultra-violet beam sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Where a boiler or process heater with a design heat input capacity less than 44 megawatts is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all vent streams are introduced with the primary fuel or are used as the primary fuel is exempt from this requirement.

(4) [This section is not applicable to the permittee.]

(b) Each owner or operator of a Group 1 transfer rack that uses a recovery device or recapture device to comply with the 98-percent organic hazardous air pollutants reduction or 20 parts per million by volume hazardous air pollutants concentration requirements in section 63.126(b)(1) of this subpart shall install either an organic monitoring device equipped with a continuous recorder, or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device or recapture device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(1) Where an absorber is used, a scrubbing liquid temperature monitoring device equipped with a continuous recorder shall be used; and a specific gravity monitoring device equipped with a continuous recorder shall be used.

(2) Where a condenser is used, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used.

(3) Where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of ±10 percent or better, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle shall be used.

(c) An owner or operator of a Group 1 transfer rack may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in section 63.151(f) or section 63.152(e) of this subpart. Approval shall be requested if the owner or operator:

(1) Seeks to demonstrate compliance with the standards specified in section 63.126(b) of this subpart with a control device other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber; or

(2) Uses one of the control devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this subpart.

(d) The owner or operator of a Group 1 transfer rack using a vent system that contains by-pass lines that could divert a vent stream flow away from the control device used to comply with section 63.126(b) of this subpart shall comply with paragraph (d)(1) or (d)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in section 63.130(b) of this subpart. The flow indicator shall be installed at the entrance to any by-pass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the by-pass line valve in the closed position with a car-seal or a lock-and-key type configuration.

(i) A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the by-pass line.

(ii) If a car-seal has been broken or a valve position changed, the owner or operator shall record that the vent stream has been diverted. The car-seal or lock-and-key combination shall be returned to the secured position as soon as practicable but not later than 15 calendar days after the change in position is detected.

(e) The owner or operator shall establish a range that indicates proper operation of the control device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the information required in section 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

1.q Section 63.128 Transfer operations provisions -- test methods and procedures.

(a) A performance test is required for determining compliance with the reduction of total organic HAP emissions in section 63.126(b) of this subpart for all control devices except as specified in paragraph (c) of this section. Performance test procedures are as follows:

(1) For control devices shared between transfer racks and process vents, the performance test procedures in §§63.116(c) of this subpart shall be followed.

(2) A performance test shall consist of three runs.

(3) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(4) For control devices shared between multiple arms that load simultaneously, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(5) For control devices that are capable of continuous vapor processing but do not meet the conditions in (a)(7)(i)(B) of this section.

(A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete filling period, during which liquid organic HAP's are loaded, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(6) For intermittent vapor processing systems that do not meet the conditions in paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete control device cycle, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(7) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of sampling sites.

(i) For an owner or operator complying with the 98-percent total organic HAP reduction requirements in §§63.126(b)(1) of this subpart, sampling sites shall be located as specified in paragraph (a)(7)(i)(A) or (a)(7)(i)(B) of this section.

(A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.

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

(ii) For an owner or operator complying with the 20 parts per million by volume limit in §§63.126(b)(1) of this subpart, the sampling site shall be located at the outlet of the control device.

(8) The volumetric flow rate, in standard cubic meters per minute at 20 °°C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A as appropriate.

(9) For the purpose of determining compliance with the 20 parts per million by volume limit in §§63.126(b)(1), Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure either organic compound concentration or organic HAP concentration, except as provided in paragraph (a)(11) of this section.

(i) If Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate the concentration of organic compounds (CT):

(A) The principal organic HAP in the vent stream shall be used as the calibration gas.

(B) The span value for Method 25A of 40 CFR part 60, appendix A shall be between 1.5 and 2.5 times the concentration being measured.

(C) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(D) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (a)(9)(v) of this section.

(ii) If Method 18 of 40 CFR part 60, appendix A is used to measure the concentration of organic compounds, the organic compound concentration (CT) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_T = \sum_{j=1}^{n} C_j$$

where:

CT=Total concentration of organic compounds (minus methane and ethane), dry basis, parts per million by volume. Cj=Concentration of sample components j, dry basis, parts per million by volume. n=Number of components in the sample.

(iii) If an owner or operator uses Method 18 of 40 CFR part 60, appendix A to compute total organic HAP concentration rather than organic compounds concentration, the equation in paragraph (a)(9)(ii) of this section shall be used except that only organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iv) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration. The sampling site shall be the same as that of the organic hazardous air pollutants or organic compound samples, and the samples shall be taken during the same time that the organic hazardous air pollutants or organic compound samples are taken.

(v) The organic compound concentration corrected to 3 percent oxygen (Cc) shall be calculated using the following equation:

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

where:

Cc=Concentration of organic compounds corrected to 3 percent oxygen, dry basis, parts per million by volume. CT=Total concentration of organic compounds, dry basis, parts per million by volume. %O2d=Concentration of oxygen, dry basis, percent by volume.

(10) For the purpose of determining compliance with the 98-percent reduction requirement in §§63.126(b)(1) of this subpart, Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used, except as provided in paragraph (a)(11) of this section.

(i) For the purpose of determining compliance with the reduction efficiency requirement, organic compound concentration may be measured in lieu of organic HAP concentration.

(ii) If Method 25A of 40 CFR part 60, appendix A is used to measure the concentration of organic compounds (CT), the principal organic HAP in the vent stream shall be used as the calibration gas.

(A) An emission testing interval shall consist of each 15-minute period during the performance test. For each interval, a reading from each measurement shall be recorded.

(B) The average organic compound concentration and the volume measurement shall correspond to the same emissions testing interval.

(C) The mass at the inlet and outlet of the control device during each testing interval shall be calculated as follows:

Mj=FKVs CT

where:

Mj=Mass of organic compounds emitted during testing interval j, kilograms. Vs=Volume of air-vapor mixture exhausted at standard conditions, 20 °°C and 760 millimeters mercury, standard cubic meters. CT=Total concentration of organic compounds (as measured) at the exhaust vent, parts per million by volume, dry basis. K=Density, kilograms per standard cubic meter organic HAP. 659 kilograms per standard cubic meter organic HAP. (Note: The density term cancels out when the percent reduction is calculated. Therefore, the density used has no effect. The density of hexane is given so that it can be used to maintain the units of Mj.) F=10−-6=Conversion factor, (cubic meters organic HAP per cubic meters air) * (parts per million by volume)−-1.

(D) The organic compound mass emission rates at the inlet and outlet of the control device shall be calculated as follows:

$$E_i = \frac{\sum_{j=1}^{n} M_{ij}}{T}$$

$$E_o = \frac{\sum_{j=1}^{n} M_{oj}}{T}$$

where:

Ei, Eo=Mass flow rate of organic compounds at the inlet (i) and outlet (o) of the combustion or recovery device, kilograms per hour. Mij, Moj=Mass of organic compounds at the inlet (i) or outlet (o) during testing interval j, kilograms. T=Total time of all testing intervals, hours. n=Number of testing intervals.

(iii) If Method 18 of 40 CFR part 60, appendix A is used to measure organic compounds, the mass rates of organic compounds (Ei, Eo) shall be computed using the following equations:

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

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

where:

Cij, Coj=Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume. MWij, MWoj=Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole. Qi, Qo=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute. K2=Constant, 2.494 ×× 10−-6 (parts per million)−-1 (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °°C.

(iv) Where Method 18 or 25A of 40 CFR part 60, appendix A is used to measure the percent reduction in organic compounds, the percent reduction across the control device shall be calculated as follows:

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

where:

R=Control efficiency of control device, percent. Ei=Mass emitted or mass flow rate of organic compounds at the inlet to the combustion or recovery device as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour. Eo=Mass emitted or mass flow rate of organic compounds at the outlet of the combustion or recovery device, as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

(11) The owner or operator may use any methods or data other than Method 18 or Method 25A of 40 CFR part 60, appendix A, if the method or data has been validated according to Method 301 of appendix A of this part.

(b) When a flare is used to comply with section 63.126(b)(2), the owner or operator shall comply with paragraphs (b)(1) through (3) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.

(1) Conduct a visible emission test using the techniques specified in §§63.11(b)(4). The observation period shall be as specified in paragraph (b)(1)(i) or (ii) of this section instead of the 2-hour period specified in §§63.11(b)(4).

(i) If the loading cycle is less than 2 hours, then the observation period for that run shall be for the entire loading cycle.

(ii) If additional loading cycles are initiated within the 2-hour period, then visible emission observations shall be conducted for the additional cycles.

(2) Determine the net heating value of the gas being combusted, using the techniques specified in §§63.11(b)(6).

(3) Determine the exit velocity using the techniques specified in either §§63.11(b)(7)(i) (and §§63.11(b)(7)(iii), where applicable) or §§63.11(b)(8), as appropriate.

(c) An owner or operator is not required to conduct a performance test when any of the conditions specified in paragraphs (c)(1) through (c)(7) of this section are met.

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

(2) When a boiler or process heater burning hazardous waste is used for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266 subpart H.

(3) When emissions are routed to a fuel gas system or when a boiler or process heater is used and the vent stream is introduced with the primary fuel.

(4) When a vapor balancing system is used.

(5) When emissions are recycled to a chemical manufacturing process unit.

(6) When a transfer rack transfers less than 11.8 million liters per year and the owner or operator complies with the requirements in paragraph (h) of this section or uses a flare to comply with §§63.126(b)(2) of this subpart.

(7) When a hazardous waste incinerator is used for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements 40 CFR part 265, subpart O.

(d) [This section is not applicable to the permittee.]

(e) The owner or operator shall inspect the vapor collection system and vapor balancing system, according to the requirements for vapor collection systems in section 63.148 of this subpart.

(1) Inspections shall be performed only while a tank truck or railcar is being loaded.

(2) For vapor collection systems only, an inspection shall be performed prior to each performance test required to demonstrate compliance with section 63.126(b)(1) of this subpart.

(3) For each vapor collection system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in section 63.148 of this subpart.

(f) For the purposes of demonstrating vapor tightness to determine compliance with section 63.126(e)(2) of this subpart, the following procedures and equipment shall be used:

(1) The pressure test procedures specified in Method 27 of 40 CFR Part 60, Appendix A; and

(2) A pressure measurement device which has a precision of #1B2.5 millimeters of mercury or better and which is capable of measuring above the pressure at which the tank truck or railcar is to be tested for vapor tightness.

(g) [This section is not applicable to the permittee.]

(h) [This section is not applicable to the permittee.]

1.r Section 63.129 Transfer operations provisions -- reporting and record keeping for performance tests and notification of compliance status.

(a) Each owner or operator of a Group 1 transfer rack shall:

(1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(8) of this section, as applicable.

(2) Include the data specified in paragraphs (a)(4) through (a)(7) of this section in the Notification of Compliance Status report as specified in section 63.152(b) of this subpart.

(3) If any subsequent performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(7) of this section in the next Periodic Report as specified in section 63.152(c) of this subpart.

(4) Record and report the following when using a control device other than a flare to achieve a 98 weight percent reduction in total organic HAP or a total organic HAP concentration of 20 parts per million by volume, as specified in section 63.126(b)(1) of this subpart:

(i) The parameter monitoring results for thermal incinerators, catalytic incinerators, boilers or process heaters, absorbers, condensers, or carbon adsorbers specified in table 7 of this subpart, recorded during the performance test, and averaged over the time period of the performance testing.

(ii) The percent reduction of total organic HAP or TOC achieved by the control device determined as specified in section 63.128(a) of this subpart, or the concentration of total organic HAP or TOC (parts per million by volume, by compound)

determined as specified in section 63.128(a) of this subpart at the outlet of the control device. For combustion devices, the concentration shall be reported on a dry basis corrected to 3 percent oxygen.

(iii) The parameters shall be recorded at least every 15 minutes.

(iv) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(5) Record and report the following when using a flare to comply with section 63.126(b)(2) of this subpart:

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by section 63.128(b) of this subpart; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(6) [This section is not applicable to the permittee.]

(7) [This section is not applicable to the permittee.]

(8) Report that the emission stream is being routed to a fuel gas system or a process, when complying using section 63.126(b)(4).

(b) If an owner or operator requests approval to use a control device other than those listed in table 7 of this subpart or to monitor a parameter other than those specified in table 7 of this subpart, the owner or operator shall submit a description of planned reporting and record keeping procedures as required under section 63.151(f) or section 63.152(e) of this subpart. The Administrator will specify appropriate reporting and record keeping requirements as part of the review of the permit application or by other appropriate means.

(c) For each parameter monitored according to table 7 of this subpart or paragraph (b) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control device. In order to establish the range, the information required in section 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

(d) Each owner or operator shall maintain a record describing in detail the vent system used to vent each affected transfer vent stream to a control device. This document shall list all valves and vent pipes that could vent the stream to the atmosphere, thereby by-passing the control device; identify which valves are secured by car-seals or lock-and-key type configurations; and indicate the position (open or closed) of those valves which have car-seals. Equipment leaks such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(e) [This section is not applicable to the permittee.]

(f) [This section is not applicable to the permittee.]

1.s Section 63.130 Transfer operations provisions -- periodic record keeping and reporting.

(a) Each owner or operator using a control device to comply with section 63.126(b)(1) or (b)(2) of this subpart shall keep the following up-to-date, readily accessible records:

(1) While the transfer vent stream is being vented to the control device, continuous records of the equipment operating parameters specified to be monitored under section 63.127 of this subpart, and listed in table 7 of this subpart or specified by the Administrator in accordance with sections 63.127(c) and 63.129(b). For flares, the hourly records and records of pilot flame outages specified in table 7 shall be maintained in place of continuous records.

(2) Records of the daily average value of each monitored parameter for each operating day determined according to the procedures specified in section 63.152(f), except as provided in paragraphs (a)(2)(i) through (a)(2)(iii) of this section.

(i) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.

(ii) If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 7 of this subpart shall be kept instead of the daily averages.

(iii) Records of the duration of all periods when the vent stream is diverted through by-pass lines shall be kept rather than daily averages.

(3) For boilers or process heaters, records of any changes in the location at which the vent stream is introduced into the flame zone as required under the reduction of total organic HAP emissions in section 63.126(b)(1) of this subpart.

(b) If a vapor collection system containing valves that could divert the emission stream away from the control device is used, each owner or operator of a Group 1 transfer rack subject to the provisions of section 63.127(d) of this subpart shall keep up-to-date, readily accessible records of:

(1) Hourly records of whether the flow indicator specified under section 63.127(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(2) Where a seal mechanism is used to comply with section 63.127(d)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the by-pass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken, as listed in table 7 of this subpart.

(c) Each owner or operator of a Group 1 transfer rack who uses a flare to comply with section 63.126(b)(2) of this subpart shall keep up-to-date, readily accessible records of the flare pilot flame monitoring specified under section 63.127(a)(2) of this subpart.

(d) Each owner or operator of a transfer rack subject to the requirements of section 63.126 of this subpart shall submit to the Administrator Periodic Reports of the following information according to the schedule in section 63.152(c) of this subpart.

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values were outside the range established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data are not collected for each excursion caused by insufficient monitoring data as defined in §§63.152(c)(2)(ii)(A) of this subpart.

(3) Reports of the times and durations of all periods recorded under paragraph (b)(1) of this section when the vent stream was diverted from the control device.

(4) Reports of all times recorded under paragraph (b)(2) of this section when maintenance is performed on car-sealed valves, when the car seal is broken, when the by-pass line valve position is changed, or the key for a lock-and-key type configuration has been checked out.

(5) Reports of the times and durations of all periods recorded under paragraph (a)(2)(i) of this section in which all pilot flames of a flare were absent.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (a)(2)(vi) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(e) The owner or operator of a Group 1 transfer rack shall record that the verification of DOT tank certification or Method 27 testing, required in section 63.126(e) of this subpart, has been performed. Various methods for the record of verification can be used, such as: A check off on a log sheet; a list of DOT serial numbers or Method 27 data; or a position description for gate security, showing that the security guard will not allow any trucks on site that do not have the appropriate documentation.

(f) Each owner or operator of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in paragraphs (f)(1) through (f)(3) of this section in a readily accessible location on site:

(1) An analysis demonstrating the design and actual annual throughput of the transfer rack;

(2) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations.

(3) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack.

(i) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressures less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated.

(ii) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred.

1.t Section 63.132 Process wastewater provisions -- general.

(a) Existing sources. This paragraph specifies the requirements applicable to process wastewater streams located at existing sources. The owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(3) of this section, no later than the applicable dates specified in section 63.100 of Subpart F of this part.

(1) Determine wastewater streams to be controlled for Table 9 compounds. Determine whether each wastewater stream requires control for Table 9 compounds by complying with the requirements in either paragraph (a)(1)(i) or (a)(1)(ii) of this section, and comply with the requirements in paragraph (a)(1)(iii) of this section.

(i) Comply with paragraph (c) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 9 compounds; or

(ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream.

(iii) Comply with paragraph (f) of this section.

(2) Requirements for Group 1 wastewater streams. For wastewater streams that are Group 1 for Table 9 compounds, comply with paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators as specified in §§63.133 through §§63.137 of this subpart, except as provided in paragraphs (a)(2)(i)(A) and (a)(2)(i)(B) of this section and §§63.138(a)(3) of this subpart.

(A) The waste management units may be equipped with pressure relief devices that vent directly to the atmosphere provided the pressure relief device is not used for planned or routine venting of emissions.

(B) The pressure relief device remains in a closed position at all times except when it is necessary for the pressure relief device to open for the purpose of preventing physical damage or permanent deformation of the waste management unit in accordance with good engineering and safety practices.

(ii) Comply with the applicable requirements for control of Table 9 compounds as specified in §§63.138 of this subpart. Alternatively, the owner or operator may elect to comply with the treatment provisions specified in §§63.132(g) of this subpart.

(iii) Comply with the applicable monitoring and inspection requirements specified in §§63.143 of this subpart.

(iv) Comply with the applicable recordkeeping and reporting requirements specified in §§§63.146 and 63.147 of this subpart.

(3) Requirements for Group 2 wastewater streams. For wastewater streams that are Group 2 for table 9 compounds, comply with the applicable recordkeeping and reporting requirements specified in §§§§63.146(b)(1) and 63.147(b)(8).

(b) New sources. This paragraph specifies the requirements applicable to process wastewater streams located at new sources. The owner or operator shall comply with the requirements in paragraphs (b)(1) through (b)(4) of this section, no later than the applicable dates specified in section 63.100 of Subpart F of this part.

(1) Determine wastewater streams to be controlled for Table 8 compounds. Determine whether each wastewater stream requires control for Table 8 compounds by complying with the requirements in either paragraph (b)(1)(i) or (b)(1)(ii) of this section, and comply with the requirements in paragraph (b)(1)(iii) of this section.

(i) Comply with paragraph (d) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 8 compounds; or

(ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream for Table 8 compounds.

(iii) Comply with paragraph (f) of this section.

(2) Determine wastewater streams to be controlled for Table 9 compounds. Determine whether each wastewater stream requires control for Table 9 compounds by complying with the requirements in either paragraph (b)(2)(i) or (b)(2)(ii) of this section, and comply with the requirements in paragraph (b)(2)(iii) of this section.

(i) Comply with paragraph (c) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 9 compounds; or

(ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream.

(iii) Comply with paragraph (f) of this section.

(3) Requirements for Group 1 wastewater streams. For wastewater streams that are Group 1 for Table 8 compounds and/or Table 9 compounds, comply with paragraphs (b)(3)(i) through (b)(3)(iv) of this section.

(i) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators specified in the requirements of §§63.133 through §§63.137 of this subpart, except as provided in paragraphs (b)(3)(i)(A) and (b)(3)(i)(B) of this section and §§63.138(a)(3) of this subpart.

(A) The waste management units may be equipped with pressure relief devices that vent directly to the atmosphere provided the pressure relief device is not used for planned or routine venting of emissions.

(B) The pressure relief device remains in a closed position at all times except when it is necessary for the pressure relief device to open for the purpose of preventing physical damage or permanent deformation of the waste management unit in accordance with good engineering and safety practices.

(ii) Comply with the applicable requirements for control of Table 8 compounds specified in §§63.138 of this subpart. Alternatively, the owner or operator may elect to comply with the provisions specified in §§63.132(g) of this subpart.

(iii) Comply with the applicable monitoring and inspection requirements specified in §§63.143 of this subpart.

(iv) Comply with the applicable recordkeeping and reporting requirements specified in §§§§63.146 and 63.147 of this subpart.

(4) Requirements for Group 2 wastewater streams. For wastewater streams that are Group 2 for both table 8 and table 9 compounds, comply with the applicable recordkeeping and reporting requirements specified in §§§§63.146(b)(1) and 63.147(b)(8).

(c) How to determine Group 1 or Group 2 status for Table 9 compounds. This paragraph provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 9 compounds. Total annual average concentration shall be determined according to the procedures specified in section 63.144(b) of this subpart. Annual average flow rate shall be determined according to the procedures specified in section 63.144(c) of this subpart.

(1) A wastewater stream is a Group 1 wastewater stream for Table 9 compounds if:

(i) The total annual average concentration of Table 9 compounds is greater than or equal to 10,000 parts per million by weight at any flow rate; or

(ii) The total annual average concentration of Table 9 compounds is greater than or equal to 1,000 parts per million by weight and the annual average flow rate is greater than or equal to 10 liters per minute.

(2) A wastewater stream is a Group 2 wastewater stream for Table 9 compounds if it is not a Group 1 wastewater stream for Table 9 compounds by the criteria in paragraph (c)(1) of this section.

(d) How to determine Group 1 or Group 2 status for Table 8 compounds. This paragraph provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 8 compounds. Annual average concentration for each Table 8 compound shall be determined according to the procedures specified in section 63.144(b) of this subpart. Annual average flow rate shall be determined according to the procedures specified in section 63.144(c) of this subpart.

(1) A wastewater stream is a Group 1 wastewater stream for Table 8 compounds if the annual average flow rate is 0.02 liter per minute or greater and the annual average concentration of any individual table 8 compound is 10 parts per million by weight or greater.

(2) A wastewater stream is a Group 2 wastewater stream for Table 8 compounds if the annual average flow rate is less than 0.02 liter per minute or the annual average concentration for each individual Table 8 compound is less than 10 parts per million by weight.

(e) How to designate a Group 1 wastewater stream. The owner or operator may elect to designate a wastewater stream a Group 1 wastewater stream in order to comply with paragraph (a)(1) or (b)(1) of this section. To designate a wastewater stream or a mixture of wastewater streams a Group 1 wastewater stream, the procedures specified in paragraphs (e)(1) and (e)(2) of this section and section 63.144(a)(2) of this subpart shall be followed.

(1) From the point of determination for each wastewater stream that is included in the Group 1 designation to the location where the owner or operator elects to designate such wastewater stream(s) as a Group 1 wastewater stream, the owner or operator shall comply with all applicable emission suppression requirements specified in §§§§63.133 through 63.137.

(2) From the location where the owner or operator designates a wastewater stream or mixture of wastewater streams to be a Group 1 wastewater stream, such Group 1 wastewater stream shall be managed in accordance with all applicable emission suppression requirements specified in §§§§63.133 through 63.137 and with the treatment requirements in §§63.138 of this part.

(f) Owners or operators of sources subject to this subpart shall not discard liquid or solid organic materials with a concentration of greater than 10,000 parts per million of Table 9 compounds (as determined by analysis of the stream composition, engineering calculations, or process knowledge, according to the provisions of section 63.144(b) of this subpart) from a chemical manufacturing process unit to water or wastewater, unless the receiving stream is managed and treated as a Group 1 wastewater stream. This prohibition does not apply to materials from the activities listed in paragraphs (f)(1) through (f)(4) of this section.

(1) Equipment leaks;

(2) Activities included in maintenance or startup/shutdown/malfunction plans;

(3) Spills; or

(4) Samples of a size not greater than reasonably necessary for the method of analysis that is used.

(g) Off-site treatment or on-site treatment not owned or operated by the source. The owner or operator may elect to transfer a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream to an on-site treatment operation not owned or operated by the owner or operator of the source generating the wastewater stream or residual, or to an off-site treatment operation.

(1) The owner or operator transferring the wastewater stream or residual shall:

(i) Comply with the provisions specified in §§§§63.133 through 63.137 of this subpart for each waste management unit that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream prior to shipment or transport.

(ii) Include a notice with the shipment or transport of each Group 1 wastewater stream or residual removed from a Group 1 wastewater stream. The notice shall state that the wastewater stream or residual contains organic hazardous air pollutants that are to be treated in accordance with the provisions of this subpart. When the transport is continuous or ongoing (for example, discharge to a publicly-owned treatment works), the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

(2) The owner or operator may not transfer the wastewater stream or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any Group 1 wastewater stream or residual removed from a Group 1 wastewater stream received from a source subject to the requirements of this subpart in accordance with the requirements of either §§§§63.133 through 63.147, or §§63.102(b) of subpart F, or subpart D of this part if alternative emission limitations have been granted the transferor in accordance with those provisions. The certifying entity may revoke the written certification by sending a written statement to the EPA and the owner or operator giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the regulatory provisions listed in this paragraph. Upon expiration of the notice period, the owner or operator may not transfer the wastewater stream or residual to the treatment operation.

(3) By providing this written certification to the EPA, the certifying entity accepts responsibility for compliance with the regulatory provisions listed in paragraph (g)(2) of this section with respect to any shipment of wastewater or residual covered by the written certification. Failure to abide by any of those provisions with respect to such shipments may result in enforcement action by the EPA against the certifying entity in accordance with the enforcement provisions applicable to violations of these provisions by owners or operators of sources.

(4) Written certifications and revocation statements, to the EPA from the transferees of wastewater or residuals shall be signed by the responsible official of the certifying entity, provide the name and address of the certifying entity, and be sent to the appropriate EPA Regional Office at the addresses listed in 40 CFR 63.13. Such written certifications are not transferable by the treater.

1.u Section 63.133 Process wastewater provisions -- wastewater tanks.
[This section is not applicable to the permittee.]

1.v Section 63.134 Process wastewater provisions -- surface impoundments.
[This section is not applicable to the permittee.]

1.w Section 63.135 Process wastewater provisions -- containers.
(a) For each container that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b) through (f) of this section.

(b) The owner or operator shall operate and maintain a cover on each container used to handle, transfer, or store a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the following requirements:

(1) Except as provided in paragraph (d)(4) of this section, if the capacity of the container is greater than 0.42 m³, the cover and all openings (e.g., bungs, hatches, sampling ports, and pressure relief devices) shall be maintained in accordance with the requirements specified in Sec. 63.148 of this subpart.

(2) If the capacity of the container is less than or equal to 0.42 m³, the owner or operator shall comply with either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) The container must meet existing Department of Transportation specifications and testing requirements under 49 CFR part 178; or

(ii) Except as provided in paragraph (d)(4) of this section, the cover and all openings shall be maintained without leaks as specified in Sec. 63.148 of this subpart.

(3) The cover and all openings shall be maintained in a closed position (e.g., covered by a lid) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the container except when it is necessary to use the opening for filling, removal, inspection, sampling, or pressure relief events related to safety considerations.

(c) For containers with a capacity greater than or equal to 0.42 m³, a submerged fill pipe shall be used when a container is being filled by pumping with a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream.

(1) The submerged fill pipe outlet shall extend to no more than 6 inches or within two fill pipe diameters of the bottom of the container while the container is being filled.

(2) The cover shall remain in place and all openings shall be maintained in a closed position except for those openings required for the submerged fill pipe and for venting of the container to prevent physical damage or permanent deformation of the container or cover.

(d) During treatment of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, including aeration, thermal or other treatment, in a container, whenever it is necessary for the container to be open, the container shall be located within an enclosure with a closed-vent system that routes the organic hazardous air pollutants vapors vented from the container to a control device.

(1) Except as provided in paragraph (d)(4) of this section, the enclosure and all openings (e.g., doors, hatches) shall be maintained in accordance with the requirements specified in Sec. 63.148 of this subpart.

(2) The control device shall be designed, operated, and inspected in accordance with Sec. 63.139 of this subpart.

(3) Except as provided in paragraph (d)(4) of this section, the closed-vent system shall be inspected in accordance with Sec. 63.148 of this subpart.

(4) For any enclosure and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in Sec. 63.148 of this subpart.

(e) Each container shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with Sec. 63.143 of this subpart.

(1) For containers, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.

(2) For containers, control equipment failure includes, but is not limited to, any time a cover or door has a gap or crack, or is broken.

(f) Except as provided in Sec. 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

1.x Section 63.136 Process wastewater provisions -- individual drain systems.

(a) For each individual drain system that receives or manages a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) or with paragraphs (e), (f), and (g) of this section.

(b) If the owner or operator elects to comply with this paragraph, the owner or operator shall operate and maintain on each opening in the individual drain system a cover and if vented, route the vapors to a process or through a closed vent system to a control device. The owner or operator shall comply with the requirements of paragraphs (b)(1) through (b)(5) of this section.

(1) The cover and all openings shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports) shall be maintained in accordance with the requirements specified in §§63.148 of this subpart.

(ii) The cover and all openings shall be maintained in a closed position at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the drain system except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with §§63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with §§63.148 of this subpart.

(4) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in §§63.148 of this subpart.

(5) The individual drain system shall be designed and operated to segregate the vapors within the system from other drain systems and the atmosphere.

(c) Each individual drain system shall be inspected initially, and semi- annually thereafter, for improper work practices and control equipment failures, in accordance with the inspection requirements specified in table 11 of this subpart.

(1) For individual drain systems, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) For individual drain systems, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a gap or crack, or is broken.

(d) Except as provided in §§63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

(e) If the owner or operator elects to comply with this paragraph, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(3) of this section:

(1) Each drain shall be equipped with water seal controls or a tightly fitting cap or plug. The owner or operator shall comply with paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) For each drain equipped with a water seal, the owner or operator shall ensure that the water seal is maintained. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap. Visual observation is also an acceptable alternative.

(ii) If a water seal is used on a drain receiving a Group 1 wastewater, the owner or operator shall either extend the pipe discharging the wastewater below the liquid surface in the water seal of the receiving drain, or install a flexible shield (or other enclosure which restricts wind motion across the open area between the pipe and the drain) that encloses the space between the pipe discharging the wastewater to the drain receiving the wastewater. (Water seals which are used on hubs receiving Group 2 wastewater for the purpose of eliminating cross ventilation to drains carrying Group 1 wastewater are not required to have a flexible cap or extended subsurface discharging pipe.)

(2) Each junction box shall be equipped with a tightly fitting solid cover (i.e., no visible gaps, cracks, or holes) which shall be kept in place at all times except during inspection and maintenance. If the junction box is vented, the owner or operator shall comply with the requirements in paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(i) The junction box shall be vented to a process or through a closed vent system to a control device. The closed vent system shall be inspected in accordance with the requirements of §§63.148 and the control device shall be designed, operated, and inspected in accordance with the requirements of §§63.139.

(ii) If the junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level, the owner or operator may vent the junction box to the atmosphere provided that the junction box complies with the requirements in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) The vent pipe shall be at least 90 centimeters in length and no greater than 10.2 centimeters in nominal inside diameter.

(B) Water seals shall be installed and maintained at the wastewater entrance(s) to or exit from the junction box restricting ventilation in the individual drain system and between components in the individual drain system. The owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.

(3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visible gaps or cracks in joints, seals, or other emission interfaces.

(f) Equipment used to comply with paragraphs (e)(1), (e)(2), or (e)(3) of this section shall be inspected as follows:

(1) Each drain using a tightly fitting cap or plug shall be visually inspected initially, and semi-annually thereafter, to ensure caps or plugs are in place and that there are no gaps, cracks, or other holes in the cap or plug.

(2) Each junction box shall be visually inspected initially, and semi-annually thereafter, to ensure that there are no gaps, cracks, or other holes in the cover.

(3) The unburied portion of each sewer line shall be visually inspected initially, and semi-annually thereafter, for indication of cracks or gaps that could result in air emissions.

(g) Except as provided in §§63.140 of this subpart, when a gap, hole, or crack is identified in a joint or cover, first efforts at repair shall be made no later than 5 calendar days after identification, and repair shall be completed within 15 calendar days after identification.

1.y Section 63.137 Process wastewater provisions -- oil-water separators.

(a) For each oil-water separator that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (c) and (d) of this section and shall operate and maintain one of the following:

(1) A fixed roof and a closed vent system that routes the organic hazardous air pollutants vapors vented from the oil-water separator to a control device. The fixed roof, closed-vent system, and control device shall meet the requirements specified in paragraph (b) of this section;

(2) A floating roof meeting the requirements in 40 CFR part 60, subpart QQQ §§§§60.693—2(a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4). For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, the owner or operator shall operate and maintain a fixed roof, closed vent system, and control device that meet the requirements specified in paragraph (b) of this section.

(3) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(1) and (a)(2) of this section will be evaluated according to §§63.102(b) of subpart F of this part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(3)(i) or (a)(3)(ii) of this section.

(i) Actual emissions tests that use full-size or scale-model oil-water separators that accurately collect and measure all organic hazardous air pollutants emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(ii) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(b) If the owner or operator elects to comply with the requirements of paragraphs (a)(1) or (a)(2) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed-vent system shall meet the requirements of paragraph (b)(3) of this section.

(1) The fixed-roof shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in §§63.148 of this subpart.

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the oil-water separator contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with the requirements of §§63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with the requirements of §§63.148 of this subpart.

(4) For any fixed roof and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements of §§63.148 of this subpart.

(c) If the owner or operator elects to comply with the requirements of paragraph (a)(2) of this section, seal gaps shall be measured according to the procedures specified in 40 CFR part 60, subpart QQQ §§60.696(d)(1) and the schedule specified in paragraphs (c)(1) and (c)(2) of this section.

(1) Measurement of primary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every 5 years thereafter.

(2) Measurement of secondary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every year thereafter.

(d) Each oil-water separator shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with §§63.143 of this subpart. For oil-water separators, improper work practice includes, but is not limited to, leaving open or ungasketed any access door or other opening when such door or opening is not in use.

(e) Each oil-water separator shall be inspected for control equipment failures as defined in paragraph (e)(1) of this section according to the schedule specified in paragraphs (e)(2) and (e)(3) of this section.

(1) For oil-water separators, control equipment failure includes, but is not limited to, the conditions specified in paragraphs (e)(1)(i) through (e)(1)(vii) of this section.

(i) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(ii) There is stored liquid on the floating roof.

(iii) A rim seal is detached from the floating roof.

(iv) There are holes, tears, or other open spaces in the rim seal or seal fabric of the floating roof.

(v) There are gaps between the primary seal and the separator wall that exceed 67 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the primary seal and the separator wall exceeds 3.8 centimeters.

(vi) There are gaps between the secondary seal and the separator wall that exceed 6.7 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the secondary seal and the separator wall exceeds 1.3 centimeters.

(vii) A gasket, joint, lid, cover, or door has a gap or crack, or is broken.

(2) The owner or operator shall inspect for the control equipment failures in paragraphs (e)(1)(i) through (e)(1)(vi) of this section according to the schedule specified in paragraph (c) of this section.

(3) The owner or operator shall inspect for control equipment failures in paragraph (e)(1)(vii) of this section initially, and semi-annually thereafter.

(f) Except as provided in §§63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

1.z Section 63.138 Process wastewater provisions -- performance standards for treatment processes managing Group 1 wastewater streams and/or residuals removed from Group 1 wastewater streams.

(a) General requirements. This section specifies the performance standards for treating Group 1 wastewater streams. The owner or operator shall comply with the requirements as specified in paragraphs (a)(1) through (a)(6) of this section. Where multiple compliance options are provided, the options may be used in combination for different wastewater streams and/or for different compounds (e.g., Table 8 versus Table 9 compounds) in the same wastewater streams, except where otherwise provided in this section. Once a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream has been treated in accordance with this subpart, it is no longer subject to the requirements of this subpart.

(1) Existing source. If the wastewater stream, at an existing source, is Group 1 for Table 9 compounds, comply with §§63.138(b).

(2) New source. If the wastewater stream, at a new source, is Group 1 for Table 8 compounds, comply with §§63.138(c). If the wastewater stream, at a new source, is Group 1 for Table 9 compounds, comply with §§63.138(b). If the wastewater stream, at a new source, is Group 1 for Table 8 and Table 9 compounds, comply with both §§63.138(b) and §§63.138(c).

Note to paragraph (a)(2): The requirements for Table 8 and/or Table 9 compounds are similar and often identical.

(3) Biological treatment processes. Biological treatment processes in compliance with this section may be either open or closed biological treatment processes as defined in §§63.111. An open biological treatment process in compliance with this section need not be covered and vented to a control device as required in §§63.133 through §§63.137 of this subpart. An open or a closed biological treatment process in compliance with this section and using §§63.145(f) or §§63.145(g) of this subpart to demonstrate compliance is not subject to the requirements of §§63.133 through §§63.137 of this subpart. A closed biological treatment process in compliance with this section and using §§63.145(e) of this subpart to demonstrate compliance shall comply with the requirements of §§63.133 through §§63.137 of this subpart. Waste management units upstream of an open or closed biological treatment process shall meet the requirements of §§63.133 through §§63.137 of this subpart, as applicable.

(4) Performance tests and design evaluations. If design steam stripper option (§§63.138(d)) or Resource Conservation and Recovery Act (RCRA) option (§§63.138(h)) is selected to comply with this section, neither a design evaluation nor a performance test is required. For any other non-biological treatment process, and for closed biological treatment processes as defined in §§63.111 of this subpart, the owner or operator shall conduct either a design evaluation as specified in §§63.138(j), or a performance test as specified in §§63.145, of this subpart. For each open biological treatment process as defined in §§63.111 of this subpart, the owner or operator shall conduct a performance test as specified in §§63.145 of this subpart.

Note to paragraph (a)(4): Some open biological treatment processes may not require a performance test. Refer to §§63.145(h) and table 36 of this subpart to determine whether the biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

(5) Control device requirements. When gases are vented from the treatment process, the owner or operator shall comply with the applicable control device requirements specified in §§63.139 and §§63.145 (i) and (j), and the applicable leak inspection provisions specified in §§63.148, of this subpart. This requirement does not apply to any open biological treatment process that meets the mass removal requirements. Vents from anaerobic biological treatment processes may be routed through hard-piping to a fuel gas system.

(6) Residuals: general. When residuals result from treating Group 1 wastewater streams, the owner or operator shall comply with the requirements for residuals specified in §§63.138(k) of this subpart.

(7) Treatment using a series of treatment processes. In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process or control device to comply with emissions limitations, the owner or operator may use multiple treatment processes or control devices, respectively. For combinations of treatment processes where the wastewater stream is conveyed by hard-piping, the owner or operator shall comply with either the requirements of paragraph (a)(7)(i) or (a)(7)(ii) of this section. For combinations of treatment processes where the wastewater stream is not conveyed by hard-piping, the owner or operator shall comply with the requirements of paragraph (a)(7)(ii) of this section. For combinations of control devices, the owner or operator shall comply with the requirements of paragraph (a)(7)(i) of this section.

(i)(A) For combinations of treatment processes, the wastewater stream shall be conveyed by hard-piping between the treatment processes. For combinations of control devices, the vented gas stream shall be conveyed by hard-piping between the control devices.

(B) For combinations of treatment processes, each treatment process shall meet the applicable requirements of §§63.133 through §§63.137 of this subpart except as provided in paragraph (a)(3) of this section.

(C) The owner or operator shall identify, and keep a record of, the combination of treatment processes or of control devices, including identification of the first and last treatment process or control device. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status.

(D) The performance test or design evaluation shall determine compliance across the combination of treatment processes or control devices. If a performance test is conducted, the ""inlet"" shall be the point at which the wastewater stream or residual enters the first treatment process, or the vented gas stream enters the first control device. The ""outlet"" shall be the point at which the treated wastewater stream exits the last treatment process, or the vented gas stream exits the last control device.

(ii)(A) For combinations of treatment processes, each treatment process shall meet the applicable requirements of §§63.133 through §§63.137 of this subpart except as provided in paragraph (a)(3) of this section.

(B) The owner or operator shall identify, and keep a record of, the combination of treatment processes, including identification of the first and last treatment process. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status.

(C) The owner or operator shall determine the mass removed or destroyed by each treatment process. The performance test or design evaluation shall determine compliance for the combination of treatment processes by adding together the mass removed or destroyed by each treatment process.

(b) Control options: Group 1 wastewater streams for Table 9 compounds. The owner or operator shall comply with either paragraph (b)(1) or (b)(2) of this section for the control of Table 9 compounds at new or existing sources.

(1) 50 ppmw concentration option. The owner or operator shall comply with paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(i) Reduce, by removal or destruction, the total concentration of Table 9 compounds to a level less than 50 parts per million by weight as determined by the procedures specified in §§63.145(b) of this subpart.

(ii) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater stream is designated as a Group 1 wastewater stream as specified in §§63.132(e). Dilution shall not be used to achieve compliance with this option.

(2) Other compliance options. Comply with the requirements specified in any one of paragraphs (d), (e), (f), (g), (h), or (i) of this section.

(c) Control options: Group 1 wastewater streams for Table 8 compounds. The owner or operator shall comply with either paragraph (c)(1) or (c)(2) of this section for the control of Table 8 compounds at new sources.

(1) 10 ppmw concentration option. The owner or operator shall comply with paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(i) Reduce, by removal or destruction, the concentration of the individual Table 8 compounds to a level less than 10 parts per million by weight as determined in the procedures specified in §§63.145(b) of this subpart.

(ii) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater stream is designated as a Group 1 wastewater stream as specified in §§63.132(e). Dilution shall not be used to achieve compliance with this option.

(2) Other compliance options. Comply with the requirements specified in any one of paragraphs (d), (e), (f), (g), (h), or (i) of this section.

(d) Design steam stripper option. The owner or operator shall operate and maintain a steam stripper that meets the requirements of paragraphs (d)(1) through (d)(6) of this section.

(1) Minimum active column height of 5 meters,

(2) Countercurrent flow configuration with a minimum of 10 actual trays,

(3) Minimum steam flow rate of 0.04 kilograms of steam per liter of wastewater feed within the column,

(4) Minimum wastewater feed temperature to the steam stripper of 95 °°C, or minimum column operating temperature of 95 °°C,

(5) Maximum liquid loading of 67,100 liters per hour per square meter, and

(6) Operate at nominal atmospheric pressure.

(e) Percent mass removal/destruction option. The owner or operator of a new or existing source shall comply with paragraph (e)(1) or (e)(2) of this section for control of Table 8 and/or Table 9 compounds for Group 1 wastewater streams. This option shall not be used for biological treatment processes.

(1) Reduce mass flow rate of Table 8 and/or Table 9 compounds by 99 percent. For wastewater streams that are Group 1, the owner or operator shall reduce, by removal or destruction, the mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more. The removal/destruction efficiency shall be determined by the procedures specified in §§63.145(c), for noncombustion processes, or §§63.145(d), for combustion processes.

(2) Reduce mass flow rate of Table 8 and/or Table 9 compounds by Fr value. For wastewater streams that are Group 1 for Table 8 and/or Table 9 compounds, the owner or operator shall reduce, by removal or destruction, the mass flow rate by at least the fraction removal (Fr) values specified in Table 9 of this subpart. (The Fr values for Table 8 compounds are all 0.99.) The removal/destruction efficiency shall be determined by the procedures specified in §§63.145(c), for noncombustion treatment processes, or §§63.145(d), for combustion treatment processes.

(f) Required mass removal (RMR) option. The owner or operator shall achieve the required mass removal (RMR) of Table 8 compounds at a new source for a wastewater stream that is Group 1 for Table 8 compounds and/or of Table 9 compounds at a new or existing source for a wastewater stream that is Group 1 for Table 9 compounds. For nonbiological treatment processes compliance shall be determined using the procedures specified in §§63.145(e) of this subpart. For aerobic biological treatment processes compliance shall be determined using the procedures specified in §§63.145 (e) or (f) of this subpart. For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in §§63.145(e) of this subpart. For open biological treatment processes compliance shall be determined using the procedures specified in §§63.145(f) of this subpart.

(g) 95-percent RMR option, for biological treatment processes. The owner or operator of a new or existing source using biological treatment for at least one wastewater stream that is Group 1 for Table 9 compounds shall achieve a RMR of at least 95 percent for all Table 9 compounds. The owner or operator of a new source using biological treatment for at least one wastewater stream that is Group 1 for Table 8 compounds shall achieve a RMR of at least 95 percent for all Table 8 compounds. All Group 1 and Group 2 wastewater streams entering a biological treatment unit that are from chemical manufacturing process units subject to subpart F shall be included in the demonstration of the 95-percent mass removal. The owner or operator shall comply with paragraphs (g)(1) through (g)(4) of this section.

(1) Except as provided in paragraph (g)(4) of this section, the owner or operator shall ensure that all Group 1 and Group 2 wastewater streams from chemical manufacturing process units subject to this rule entering a biological treatment unit are treated to destroy at least 95-percent total mass of all Table 8 and/or Table 9 compounds.

(2) For open biological treatment processes compliance shall be determined using the procedures specified in §§63.145(g) of this subpart. For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in §§63.145 (e) or (g) of this subpart. For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in §§63.145(e) of this subpart.

(3) For each treatment process or waste management unit that receives, manages, or treats wastewater streams subject to this paragraph, from the point of determination of each Group 1 or Group 2 wastewater stream to the biological treatment unit, the owner or operator shall comply with §§§§63.133 through §§63.137 of this subpart for control of air emissions. When complying with this paragraph, the term Group 1, whether used alone or in combination with other terms, in §§63.133 through §§63.137 of this subpart shall mean both Group 1 and Group 2.

(4) If a wastewater stream is in compliance with the requirements in paragraph (b)(1), (c)(1), (d), (e), (f), or (h) of this section before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not required to be included in the total mass flow rate entering the biological treatment unit for the purpose of demonstrating compliance.

(h) Treatment in a RCRA unit option. The owner or operator shall treat the wastewater stream or residual in a unit identified in, and complying with, paragraph (h)(1), (h)(2), or (h)(3) of this section. These units are exempt from the design evaluation or performance tests requirements specified in §§63.138(a)(3) and §§63.138(j) of this subpart, and from the monitoring requirements specified in §§63.132(a)(2)(iii) and §§63.132(b)(3)(iii) of this subpart, as well as recordkeeping and reporting requirements associated with monitoring and performance tests.

(1) The wastewater stream or residual is discharged to a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O;

(2) The wastewater stream or residual is discharged to a process heater or boiler burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(3) The wastewater stream or residual is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 or 40 CFR part 144 and complies with the requirements of 40 CFR part 122. The owner or operator shall comply with all applicable requirements of this subpart prior to the point where the wastewater enters the underground portion of the injection well.

(i) One megagram total source mass flow rate option. A wastewater stream is exempt from the requirements of paragraphs (b) and (c) of this section if the owner or operator elects to comply with either paragraph (i)(1) or (2) of this section, and complies with paragraph (i)(3) of this section.

(1) All Group 1 wastewater streams at the source. The owner or operator shall demonstrate that the total source mass flow rate for Table 8 and/or Table 9 compounds is less than 1 megagram per year using the procedures in paragraphs (i)(1)(i) and (i)(1)(ii) of this section. The owner or operator shall include all Group 1 wastewater streams at the source in the total source mass flow rate. The total source mass flow rate shall be based on the mass as calculated before the wastewater stream is treated. The owner or operator who meets the requirements of this paragraph (i)(1) is exempt from the requirements of §§§§63.133 through 63.137.

(i) Calculate the annual average mass flow rate for each Group 1 wastewater stream by multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in §§63.144(c), times the total annual average concentration of Table 8 and/or Table 9 compounds, as determined by procedures specified in §§63.144(b) of this subpart. (The mass flow rate of compounds in a wastewater stream that is Group 1 for both Table 8 and Table 9 compounds should be included in the annual average mass flow rate only once.)

(ii) Calculate the total source mass flow rate from all Group 1 wastewater streams by adding together the annual average mass flow rate calculated for each Group 1 wastewater stream.

(2) Untreated and partially treated Group 1 wastewater streams. The owner or operator shall demonstrate that the total source mass flow rate for untreated Group 1 wastewater streams and Group 1 wastewater streams treated to levels less stringent than required in paragraph (b) or (c) of this section is less than 1 megagram per year using the procedures in paragraphs (i)(2)(i) and (i)(2)(ii) of this section. The owner or operator shall manage these wastewater streams in accordance with paragraph (i)(2)(iii) of this section, and shall comply with paragraph (i)(3) of this section.

(i) Calculate the annual average mass flow rate in each wastewater stream by multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in §§63.144(c), times the total annual average concentration of Table 8 and/or Table 9 compounds, as determined by procedures specified in §§63.144(b). (The mass flow rate of compounds in a wastewater stream that are Group 1 for both Table 8 and Table 9 compounds should be included in the annual average mass flow rate only once.) When determining the total source mass flow rate for the purposes of paragraph (i)(2)(i)(B) of this section, the concentration and flow rate shall be determined at the location specified in paragraph (i)(2)(i)(B) of this section and not at the location specified in §§63.144(b) and (c).

(A) For each untreated Group 1 wastewater stream, the annual average flow rate and the total annual average concentration shall be determined for that stream's point of determination.

(B) For each Group 1 wastewater stream that is treated to levels less stringent than those required by paragraph (b) or (c) of this section, the annual average flow rate and total annual average concentration shall be determined at the discharge from the treatment process or series of treatment processes.

(C) The annual average mass flow rate for Group 1 wastewater streams treated to the levels required by paragraph (b) or (c) of this section is not included in the calculation of the total source mass flow rate.

(ii) The total source mass flow rate shall be calculated by summing the annual average mass flow rates from all Group 1 wastewater streams, except those excluded by paragraph (i)(2)(i)(C) of this section.

(iii) The owner or operator of each waste management unit that receives, manages, or treats a partially treated wastewater stream prior to or during treatment shall comply with the requirements of §§§§63.133 through 63.137, as applicable. For a partially treated wastewater stream that is stored, conveyed, treated, or managed in a waste management unit meeting the requirements of §§§§63.133 through 63.137, the owner or operator shall follow the procedures in paragraph (i)(2)(i)(B) of this section to calculate mass flow rate. A wastewater stream, either untreated or partially treated, where the mass flow rate has been calculated following the procedures in paragraph (i)(2)(i)(A) of this section, is exempt from the requirements of §§§§63.133 through 63.137.

(3) Wastewater streams included in this option shall be identified in the Notification of Compliance Status required by §§63.152(b).

(j) Design evaluations or performance tests for treatment processes. Except as provided in paragraph (j)(3) or (h) of this section, the owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each nonbiological treatment process used to comply with paragraphs (b)(1), (c)(1), (e), and/or (f) of this section achieves the conditions specified for compliance. The owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each closed biological treatment process used to comply with paragraphs (f) or (g) of this section achieves the conditions specified for compliance. If an open biological treatment unit is used to comply with paragraph (f) or (g) of this section, the owner or operator shall comply with §§63.145(f) or §§63.145(g), respectively, of this subpart. Some biological treatment processes may not require a performance test. Refer to §§63.145(h) and table 36 of this subpart to determine whether the open biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

(1) A design evaluation and supporting documentation that addresses the operating characteristics of the treatment process and that is based on operation at a representative wastewater stream flow rate and a concentration under which it would be most difficult to demonstrate compliance. For closed biological treatment processes, the actual mass removal shall be determined by a mass balance over the unit. The mass flow rate of Table 8 or Table 9 compounds exiting the treatment process shall be the sum of the mass flow rate of Table 8 or Table 9 compounds in the wastewater stream exiting the biological treatment process and the mass flow rate of the vented gas stream exiting the control device. The

mass flow rate entering the treatment process minus the mass flow rate exiting the process determines the actual mass removal.

(2) Performance tests conducted using test methods and procedures that meet the applicable requirements specified in §§63.145 of this subpart.

(3) The provisions of paragraphs (j)(1) and (j)(2) of this section do not apply to design stream strippers which meet the requirements of paragraph (d) of this section.

(k) Residuals. For each residual removed from a Group 1 wastewater stream, the owner or operator shall control for air emissions by complying with §§§§63.133—137 of this subpart and by complying with one of the provisions in paragraphs (k)(1) through (k)(4) of this section.

(1) Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.

(2) Return the residual to the treatment process.

(3) Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in §§63.145(c) or (d) of this subpart.

(4) Comply with the requirements for RCRA treatment options specified in §§63.138(h) of this subpart.

1.aa Section 63.139 Process wastewater provisions -- control devices.

(a) For each control device or combination of control devices used to comply with the provisions in §§§§63.133 through 63.138 of this subpart, the owner or operator shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (b) through (f) of this section.

(b) Whenever organic hazardous air pollutants emissions are vented to a control device which is used to comply with the provisions of this subpart, such control device shall be operating.

(c) The control device shall be designed and operated in accordance with paragraph (c)(1), (c)(2), (c)(3), (c)(4), or (c)(5) of this section.

(1) An enclosed combustion device (including but not limited to a vapor incinerator, boiler, or process heater) shall meet the conditions in paragraph (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, alone or in combination with other control devices. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(i) Reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device by 95 percent by weight or greater;

(ii) Achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume on a dry basis corrected to 3 percent oxygen. The owner or operator shall use either Method 18 of 40 CFR part 60, appendix A, or any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part; or

(iii) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760 °°C.

(2) A vapor recovery system (including but not limited to a carbon adsorption system or condenser), alone or in combination with other control devices, shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device of 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of §§63.134 or §§63.135 of this subpart.

(3) A flare shall comply with the requirements of §§63.11(b) of subpart A of this part.

(4) A scrubber, alone or in combination with other control devices, shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions in such a manner that 95 weight-percent is either removed, or destroyed by chemical reaction with the scrubbing liquid or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of §§63.134 or §§63.135 of this subpart.

(5) Any other control device used shall, alone or in combination with other control devices, reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device by 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of §§63.134 or §§63.135 of this subpart.

(d) Except as provided in paragraph (d)(4) of this section, an owner or operator shall demonstrate that each control device or combination of control devices achieves the appropriate conditions specified in paragraph (c) of this section by using one or more of the methods specified in paragraphs (d)(1), (d)(2), or (d)(3) of this section.

(1) Performance tests conducted using the test methods and procedures specified in §§63.145(i) of this subpart for control devices other than flares; or

(2) A design evaluation that addresses the vent stream characteristics and control device operating parameters specified in paragraphs (d)(2)(i) through (d)(2)(vii) of this section.

(i) For a thermal vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(ii) For a catalytic vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

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

(iv) For a condenser, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(v) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration stream mass or volumetric flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

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

(vii) For a scrubber, the design evaluation shall consider the vent stream composition; constituent concentrations; liquid-to-vapor ratio; scrubbing liquid flow rate and concentration; temperature; and the reaction kinetics of the constituents with

the scrubbing liquid. The design evaluation shall establish the design exhaust vent stream organic compound concentration level and will include the additional information in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) of this section for trays and a packed column scrubber.

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

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

(3) For flares, the compliance determination specified in §§63.11(b) of subpart A of this part and §§63.145(j) of this subpart.

(4) An owner or operator using any control device specified in paragraphs (d)(4)(i) through (d)(4)(iv) of this section is exempt from the requirements in paragraphs (d)(1) through (d)(3) of this section and from the requirements in §§63.6(f) of subpart A of this part, and from the requirements of paragraph (e) of this section.

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

(ii) A boiler or process heater into which the emission stream is introduced with the primary fuel.

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

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(iv) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(e) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with §§63.143 of this subpart.

(f) Except as provided in §§63.140 of this subpart, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar days after identification or discovery of the defect.

1.bb Section 63.140 Process wastewater provisions -- delay of repair.

(a) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown, as defined in §§63.101 of subpart F of this part, or if the owner or operator determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown.

(b) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied or is no longer used to treat or manage Group 1 wastewater streams or residuals removed from Group 1 wastewater streams.

(c) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the owner or operator. Repair shall be completed as soon as practical. The owner or operator who uses this provision shall comply with the requirements of §§63.147(b)(7) to document the reasons that the delay of repair was necessary.

1.cc Section 63.143 Process wastewater provisions -- inspections and monitoring of operations.

(a) For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a

recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the inspection requirements specified in table 11 of this subpart.

(b) For each design steam stripper and biological treatment unit used to comply with §§63.138 of this subpart, the owner or operator shall comply with the monitoring requirements specified in table 12 of this subpart.

(c) If the owner or operator elects to comply with Item 1 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in §§63.151(f) of this subpart, and shall include a discription of planned reporting and recordkeeping procedures. The owner or operator shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(d) If the owner or operator elects to comply with Item 3 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in §§63.151(f) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(e) Except as provided in paragraphs (e)(4) and (e)(5) of this section, for each control device used to comply with the requirements of §§§§63.133 through 63.139 of this subpart, the owner or operator shall comply with the requirements in §§63.139(d) of this subpart, and with the requirements specified in paragraph (e)(1), (e)(2), or (e)(3) of this section.

(1) The owner or operator shall comply with the monitoring requirements specified in table 13 of this subpart; or

(2) The owner or operator shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in §§63.111 of this subpart; or

(3) The owner or operator shall request approval to monitor parameters other than those specified in paragraphs (e)(1) and (e)(2) of this section. The request shall be submitted according to the procedures specified in §§63.151(f) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(4) For a boiler or process heater in which all vent streams are introduced with primary fuel, the owner or operator shall comply with the requirements in §§63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(5) For a boiler or process heater with a design heat input capacity of 44 megawatts or greater, the owner or operator shall comply with the requirements in §§63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(f) For each parameter monitored in accordance with paragraph (c), (d), or (e) of this section, the owner or operator shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the owner or operator shall comply with the requirements specified in §§§§63.146(b)(7)(ii)(A) and (b)(8)(ii) of this subpart.

(g) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

1.dd Section 63.144 Process wastewater provisions -- test methods and procedures for determining applicability and Group 1/Group 2 determinations (determining which wastewater streams require control).

(a) Procedures to determine applicability. An owner or operator shall comply with paragraph (a)(1) or (a)(2) of this section for each wastewater stream to determine which wastewater streams require control for Table 8 and/or Table 9 compounds. The owner or operator may use a combination of the approaches in paragraphs (a)(1) and (a)(2) of this section for different wastewater streams generated at the source.

(1) Determine Group 1 or Group 2 status. Determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with paragraphs (b) and (c) of this section.

(2) Designate as Group 1. An owner or operator may designate as a Group 1 wastewater stream a single wastewater stream or a mixture of wastewater streams. The owner or operator is not required to determine the concentration or flow rate for each designated Group 1 wastewater stream for the purposes of this section.

(b) Procedures to establish concentrations, when determining Group status under paragraph (a)(1) of this section. An owner or operator who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the annual average concentration for Table 8 and/or Table 9 compounds according to paragraph (b)(1) of this section for existing sources or paragraph (b)(2) of this section for new sources. The annual average concentration shall be a flow weighted average representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12 month period. For flexible operation units, the owner or operator shall consider the anticipated production over the designated 12 month period and include all wastewater streams generated by the process equipment during this period. The owner/operator is not required to determine the concentration of Table 8 or Table 9 compounds that are not reasonably expected to be in the process.

(1) Existing sources. An owner or operator of an existing source who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the flow weighted total annual average concentration for Table 9 compounds. For the purposes of this section, the term concentration, whether concentration is used alone or with other terms, may be adjusted by multiplying by the compound-specific fraction measured (Fm) factors listed in table 34 of this subpart unless determined by the methods in §§63.144(b)(5)(i)(A) and/or (B). When concentration is determined by Method 305 as specified in §§63.144(b)(5)(i)(B), concentration may be adjusted by dividing by the compound-specific Fm factors listed in table 34 of this subpart. When concentration is determined by Method 25D as specified in §§63.144(b)(5)(i)(A), concentration may not be adjusted by the compound-specific Fm factors listed in table 34 of this subpart. Compound-specific Fm factors may be used only when concentrations of individual compounds are determined or when only one compound is in the wastewater stream. Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. The total annual average concentration shall be determined for each wastewater stream either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. The procedures specified in paragraphs (b)(3), (b)(4), and (b)(5) of this section are considered acceptable procedures for determining the annual average concentration. They may be used in combination, and no one procedure shall take precedence over another.

(2) New sources. An owner or operator of a new source who elects to comply with the requirements of paragraph (a)(1) of this section shall determine both the flow weighted total annual average concentration for Table 9 compounds and the flow weighted annual average concentration for each Table 8 compound. For the purposes of this section, the term concentration, whether concentration is used alone or with other terms, may be adjusted by multiplying by the compound-specific Fm factors listed in table 34 of this subpart unless determined by the methods in §§63.144(b)(5)(i)(A) and/or (B). When concentration is determined by Method 305 as specified in §§63.144(b)(5)(i)(B), concentration may be adjusted by dividing by the compound-specific Fm factors listed in table 34 of this subpart. When concentration is determined by Method 25D as specified in §§63.144(b)(5)(i)(A), concentration may not be adjusted by the compound-specific Fm factors listed in table 34 of this subpart. Compound-specific fraction measured factors are compound specific and shall be used only when concentration of individual compounds are determined or when only one compound is in the wastewater stream. The flow weighted annual average concentration of each Table 8 compound means the mass of each Table 8 compound occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. The annual average concentration shall be determined for each wastewater stream either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. Procedures specified in paragraphs (b)(3), (b)(4), and (b)(5) of this section are considered acceptable procedures for determining the annual average concentration. They may be used in combination, and no one procedure shall take precedence over another.

(3) Knowledge of the wastewater. Where knowledge is used to determine the annual average concentration, the owner or operator shall provide sufficient information to document the annual average concentration for wastewater streams

determined to be Group 2 wastewater streams. Documentation to determine the annual average concentration is not required for Group 1 streams. Examples of acceptable documentation include material balances, records of chemical purchases, process stoichiometry, or previous test results. If test data are used, the owner or operator shall provide documentation describing the testing protocol and the means by which any losses of volatile compounds during sampling, and the bias and accuracy of the analytical method, were accounted for in the determination.

(4) Bench-scale or pilot-scale test data. Where bench-scale or pilot-scale test data are used to determine the annual average concentration, the owner or operator shall provide sufficient information to document that the data are representative of the actual annual average concentration, or are reliably indicative of another relevant characteristic of the wastewater stream that could be used to predict the annual average concentration. For concentration data, the owner or operator shall also provide documentation describing the testing protocol, and the means by which any losses of volatile compounds during sampling, and the bias and accuracy of the analytical method, were accounted for in the determination of annual average concentration.

(5) Test data from sampling at the point of determination or at a location downstream of the point of determination. Where an owner or operator elects to comply with paragraph (a)(1) of this section by measuring the concentration for the relevant Table 8 or Table 9 compounds, the owner or operator shall comply with the requirements of this paragraph. For each wastewater stream, measurements shall be made either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. A minimum of three samples from each wastewater stream shall be taken. Samples may be grab samples or composite samples.

(i) Methods. The owner or operator shall use any of the methods specified in paragraphs (b)(5)(i)(A) through (b)(5)(i)(F) of this section.

(A) Method 25D. Use procedures specified in Method 25D of 40 CFR part 60, appendix A.

(B) Method 305. Use procedures specified in Method 305 of 40 CFR part 63, appendix A.

(C) Methods 624 and 625. Use procedures specified in Methods 624 and 625 of 40 CFR part 136, appendix A and comply with the sampling protocol requirements specified in paragraph (b)(5)(ii) of this section. If these methods are used to analyze one or more compounds that are not on the method's published list of approved compounds, the Alternative Test Procedure specified in 40 CFR 136.4 and 136.5 shall be followed. For Method 625, make corrections to the compounds for which the analysis is being conducted based on the accuracy as recovery factors in Table 7 of the method.

(D) Method 1624 and Method 1625. Use procedures specified in Method 1624 and Method 1625 of 40 CFR part 136, appendix A and comply with the requirements specified in paragraph (b)(5)(ii) of this section. If these methods are used to analyze one or more compounds that are not on the method's published list of approved compounds, the Alternative Test Procedure specified in 40 CFR 136.4 and 136.5 shall be followed.

(E) Other EPA method(s). Use procedures specified in the method and comply with the requirements specified in paragraphs (b)(5)(ii) and either paragraph (b)(5)(iii)(A) or (b)(5)(iii)(B) of this section.

(F) Method(s) other than EPA method. Use procedures specified in the method and comply with the requirements specified in paragraphs (b)(5)(ii) and (b)(5)(iii)(A) of this section.

(ii) Sampling plan. The owner or operator who is expressly referred to this paragraph by provisions of this subpart shall prepare a sampling plan. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity. The sample plan shall include procedures for determining recovery efficiency of the relevant hazardous air pollutants listed in table 8 or table 9 of this subpart. An example of an acceptable sampling plan would be one that incorporates similar sampling and sample handling requirements to those of Method 25D of 40 CFR part 60, appendix A. The sampling plan shall be maintained at the facility.

(iii) Validation of methods. The owner or operator shall validate EPA methods other than Methods 25D, 305, 624, 625, 1624, and 1625 using the procedures specified in paragraph (b)(5)(iii)(A) or (b)(5)(iii)(B) of this section. The owner or operator shall validate other methods as specified in paragraph (b)(5)(iii)(A) of this section.

(A) Validation of EPA methods and other methods. The method used to measure organic hazardous air pollutants concentrations in the wastewater shall be validated according to section 5.1 or 5.3, and the corresponding calculations in section 6.1 or 6.3, of Method 301 of appendix A of this part. The data are acceptable if they meet the criteria specified in section 6.1.5 or 6.3.3 of Method 301 of appendix A of this part. If correction is required under section 6.3.3 of Method 301 of appendix A of this part, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 of appendix A of this part are not required. The concentrations of the individual organic hazardous air pollutants measured in the water may be corrected to their concentrations had they been measured by Method 305 of appendix A of this part, by multiplying each concentration by the compound-specific fraction measured (Fm) factor listed in table 34 of this subpart.

(B) Validation for EPA methods. Follow the procedures as specified in ""Alternative Validation Procedure for EPA Waste Methods"" 40 CFR part 63, appendix D.

(iv) Calculations of average concentration. The average concentration for each individually speciated Table 8 compound shall be calculated by adding the individual values determined for the specific compound in each sample and dividing by the number of samples. The total average concentration of Table 9 compounds shall be calculated by first summing the concentration of the individual compounds to obtain a total hazardous air pollutants concentration for the sample; add the sample totals and then divide by the number of samples in the run to obtain the sample average for the run. If the method used does not speciate the compounds, the sample results should be added and this total divided by the number of samples in the run to obtain the sample average for the run.

(6) Adjustment for concentrations determined downstream of the point of determination. The owner or operator shall make corrections to the annual average concentration or total annual average concentration when the concentration is determined downstream of the point of determination at a location where: two or more wastewater streams have been mixed; one or more wastewater streams have been treated; or, losses to the atmosphere have occurred. The owner or operator shall make the adjustments either to the individual data points or to the final annual average concentration.

(c) Procedures to determine flow rate, when evaluating Group status under paragraph (a)(1) of this section. An owner or operator who elects to comply with paragraph (a)(1) of this section shall determine the annual average flow rate of the wastewater stream either at the point of determination for each wastewater stream, or downstream of the point of determination with adjustment for flow rate changes made according to paragraph (c)(4) of this section. These procedures may be used in combination for different wastewater streams at the source. The annual average flow rate for the wastewater stream shall be representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12-month period. The owner or operator shall consider the total annual wastewater volume generated by the chemical manufacturing process unit. If the chemical manufacturing process unit is a flexible operation unit, the owner or operator shall consider all anticipated production in the process equipment over the designated 12-month period. The procedures specified in paragraphs (c)(1), (c)(2), and (c)(3) of this section are considered acceptable procedures for determining the flow rate. They may be used in combination, and no one procedure shall take precedence over another.

(1) Knowledge of the wastewater. The owner or operator may use knowledge of the wastewater stream and/or the process to determine the annual average flow rate. The owner or operator shall use the maximum expected annual average production capacity of the process unit, knowledge of the process, and/or mass balance information to either: Estimate directly the annual average wastewater flow rate; or estimate the total annual wastewater volume and then divide total volume by 525,600 minutes in a year. Where knowledge is used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(2) Historical Records. The owner or operator may use historical records to determine the annual average flow rate. Derive the highest annual average flow rate of wastewater from historical records representing the most recent 5 years of operation or, if the process unit has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the process unit. Where historical records are used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(3) Measurements of flow rate. Where an owner or operator elects to comply with paragraph (a)(1) of this section by measuring the flow rate, the owner or operator shall comply with the requirements of this paragraph. Measurements shall

be made at the point of determination, or at a location downstream of the point of determination with adjustments for flow rate changes made according to paragraph (c)(4) of this section. Where measurement data are used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(4) Adjustment for flow rates determined downstream of the point of determination. The owner or operator shall make corrections to the annual average flow rate of a wastewater stream when it is determined downstream of the point of determination at a location where two or more wastewater streams have been mixed or one or more wastewater streams have been treated. The owner or operator shall make corrections for such changes in the annual average flow rate.

1.ee Section 63.145 Process wastewater provisions -- test methods and procedures to determine compliance.

(a) General. This section specifies the procedures for performance tests that are conducted to demonstrate compliance of a treatment process or a control device with the control requirements specified in §§63.138 of this subpart. Owners or operators conducting a design evaluation shall comply with the requirements of paragraph (a)(1) or (a)(2) of this section. Owners or operators conducting a performance test shall comply with the applicable requirements in paragraphs (a) through (i) of this section.

(1) Performance tests and design evaluations for treatment processes. If design steam stripper option (§§63.138(d)) or RCRA option (§§63.138(h)) is selected to comply with §§63.138, neither a design evaluation nor a performance test is required. For any other non-biological treatment process, the owner or operator shall conduct either a design evaluation as specified in §§63.138(j), or a performance test as specified in this section. For closed biological treatment processes, the owner or operator shall conduct either a design evaluation as specified in §§63.138(j), or a performance test as specified in this section. For each open biological treatment process, the owner or operator shall conduct a performance test as specified in this section.

Note:

Some open biological treatment processes may not require a performance test. Refer to §§63.145(h) and table 36 of this subpart to determine whether the biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

(2) Performance tests and design evaluations for control devices. The owner or operator shall conduct either a design evaluation as specified in §§63.139(d), or a performance test as specified in paragraph (i) of this section for control devices other than flares and paragraph (j) of this section for flares.

(3) Representative process unit operating conditions. Compliance shall be demonstrated for representative operating conditions. Operations during periods of startup, shutdown, or malfunction and periods of nonoperation shall not constitute representative conditions. The owner or operator shall record the process information that is necessary to document operating conditions during the test.

(4) Representative treatment process or control device operating conditions. Performance tests shall be conducted when the treatment process or control device is operating at a representative inlet flow rate and concentration. If the treatment process or control device will be operating at several different sets of representative operating conditions, the owner or operator shall comply with paragraphs (a)(4)(i) and (a)(4)(ii) of this section. The owner or operator shall record information that is necessary to document treatment process or control device operating conditions during the test.

(i) Range of operating conditions. If the treatment process or control device will be operated at several different sets of representative operating conditions, performance testing over the entire range is not required. In such cases, the performance test results shall be supplemented with modeling and/or engineering assessments to demonstrate performance over the operating range.

(ii) Consideration of residence time. If concentration and/or flow rate to the treatment process or control device are not relatively constant (i.e., comparison of inlet and outlet data will not be representative of performance), the owner or operator shall consider residence time, when determining concentration and flow rate.

(5) Testing equipment. All testing equipment shall be prepared and installed as specified in the applicable test methods, or as approved by the Administrator.

(6) Compounds not required to be considered in performance tests or design evaluations. Compounds that meet the requirements specified in paragraph (a)(6)(i), (a)(6)(ii), or (a)(6)(iii) of this section are not required to be included in the performance test. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in table 34 of this subpart.

(i) Compounds not used or produced by the chemical manufacturing process unit; or

(ii) Compounds with concentrations at the point of determination that are below 1 part per million by weight; or

(iii) Compounds with concentrations at the point of determination that are below the lower detection limit where the lower detection limit is greater than 1 part per million by weight. The method shall be an analytical method for wastewater which has that compound as a target analyte.

(7) Treatment using a series of treatment processes. In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process to comply with emissions limitations, the owner or operator may use multiple treatment processes. The owner or operator complying with the requirements of §§63.138(a)(7)(i), when wastewater is conveyed by hard-piping, shall comply with either §§63.145(a)(7)(i) or §§63.145(a)(7)(ii) of this subpart. The owner or operator complying with the requirements of §§63.138(a)(7)(ii) of this subpart shall comply with the requirements of §§63.145(a)(7)(ii) of this subpart.

(i) The owner or operator shall conduct the performance test across each series of treatment processes. For each series of treatment processes, inlet concentration and flow rate shall be measured either where the wastewater stream enters the first treatment process in a series of treatment processes, or prior to the first treatment process as specified in §§63.145(a)(9) of this subpart. For each series of treatment processes, outlet concentration and flow rate shall be measured where the wastewater stream exits the last treatment process in the series of treatment processes, except when the last treatment process is an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in §§63.145 (f) or (g) of this subpart. When the last treatment process is either an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in §§63.145 (f) or (g) of this subpart, inlet and outlet concentrations and flow rates shall be measured as provided in paragraphs (a)(7)(i)(A) and (a)(7)(i)(B) of this section. The mass flow rates removed or destroyed by the series of treatment processes and by the biological treatment process are all used to calculate actual mass removal (AMR) as specified in §§63.145(f)(5)(ii) of this subpart.

(A) The inlet and outlet to the series of treatment processes prior to the biological treatment process are the points at which the wastewater enters the first treatment process and exits the last treatment process in the series, respectively, except as provided in paragraph (a)(9)(ii) of this section.

(B) The inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process or the outlet from the series of treatment processes identified in paragraph (a)(7)(i)(A) of this section, except as provided in paragraph (a)(9)(ii) of this section.

(ii) The owner or operator shall conduct the performance test across each treatment process in the series of treatment processes. The mass flow rate removed or destroyed by each treatment process shall be added together to determine whether compliance has been demonstrated using §§63.145 (c), (d), (e), (f), and (g), as applicable. If a biological treatment process is one of the treatment processes in the series of treatment processes, the inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process, or the inlet to the equalization tank if all the criteria of paragraph (a)(9)(ii) of this section are met.

(8) When using a biological treatment process to comply with §§63.138 of this subpart, the owner or operator may elect to calculate the AMR using a subset of Table 8 and/or Table 9 compounds determined at the point of determination or downstream of the point of determination with adjustment for concentration and flowrate changes made according to §§63.144(b)(6) and §§63.144(c)(4) of this subpart, respectively. All Table 8 and/or Table 9 compounds measured to determine the RMR, except as provided by §§63.145(a)(6), shall be included in the RMR calculation.

(9) The owner or operator determining the inlet for purposes of demonstrating compliance with §§63.145 (e), (f), or (g) of this subpart may elect to comply with paragraph (a)(9)(i) or (a)(9)(ii) of this section.

(i) When wastewater is conveyed exclusively by hard-piping from the point of determination to a treatment process that is either the only treatment process or the first in a series of treatment processes (i.e., no treatment processes or other waste management units are used upstream of this treatment process to store, handle, or convey the wastewater), the inlet to the treatment process shall be at any location from the point of determination to where the wastewater stream enters the treatment process. When samples are taken upstream of the treatment process and before wastewater streams have converged, the owner or operator shall ensure that the mass flow rate of all Group 1 wastewater streams is accounted for when using §§63.138 (e) or (f) to comply and that the mass flow rate of all Group 1 and Group 2 wastewater streams is accounted for when using §§63.138(g) to comply, except as provided in §§63.145(a)(6).

(ii) The owner or operator may consider the inlet to the equalization tank as the inlet to the biological treatment process if all the criteria in paragraphs (a)(9)(ii)(A) through (a)(9)(ii)(C) of this section are met. The outlet from the series of treatment processes prior to the biological treatment process is the point at which the wastewater exits the last treatment process in the series prior to the equalization tank, if the equalization tank and biological treatment process are part of a series of treatment processes. The owner or operator shall ensure that the mass flow rate of all Group 1 wastewater streams is accounted for when using §§63.138 (e) or (f) to comply and that the mass flow rate of all Group 1 and Group 2 wastewater streams is accounted for when using §§63.138(g) to comply, except as provided in §§63.145(a)(6).

(A) The wastewater is conveyed by hard-piping from either the last previous treatment process or the point of determination to the equalization tank.

(B) The wastewater is conveyed from the equalization tank exclusively by hard-piping to the biological treatment process and no treatment processes or other waste management units are used to store, handle, or convey the wastewater between the equalization tank and the biological treatment process.

(C) The equalization tank is equipped with a fixed roof and a closed vent system that routes emissions to a control device that meets the requirements of §§63.133(a)(2)(i) and §§63.133 (b)(1) through (b)(4) of this subpart.

(b) Noncombustion treatment process——concentration limits. This paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion treatment process with the parts per million by weight wastewater stream concentration limits at the outlet of the treatment process. This compliance option is specified in §§63.138(b)(1) and §§63.138(c)(1). Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per §§63.144(b)(5)(ii). Samples shall be collected and analyzed using the procedures specified in §§63.144 (b)(5)(i), (b)(5)(ii), and (b)(5)(iii) of this subpart. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 may be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 34 of this subpart. Concentration measurements based on methods other than Method 305 may be adjusted by multiplying each concentration by the compound-specific Fm factor listed in table 34 of this subpart. (For wastewater streams that are Group 1 for both Table 8 and Table 9 compounds, compliance is demonstrated only if the sum of the concentrations of Table 9 compounds is less than 50 ppmw, and the concentration of each Table 8 compound is less than 10 ppmw.)

(c) Noncombustion, nonbiological treatment process: Percent mass removal/destruction option. This paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion, nonbiological treatment process with the percent mass removal limits specified in §§63.138(e) (1) and (2) for Table 8 and/or Table 9 compounds. The owner or operator shall comply with the requirements specified in §§63.145 (c)(1) through (c)(6) of this subpart.

(1) Concentration. The concentration of Table 8 and/or Table 9 compounds entering and exiting the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per §§63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in Table 34 of this subpart.

(2) Flow rate. The flow rate of the entering and exiting wastewater streams shall be determined using inlet and outlet flow measurement devices, respectively. Where the outlet flow is not greater than the inlet flow, a flow measurement

device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Calculation of mass flow rate——for noncombustion, nonbiological treatment processes. The mass flow rates of Table 8 and/or Table 9 compounds entering and exiting the treatment process are calculated as follows.

$$QMW_a = \frac{\rho}{p * 10^6}\left(\sum_{k=1}^{p} Q_{a,k} C_{T,a,k}\right) \qquad (Eqn\ WW1)$$

$$QMW_b = \frac{\rho}{p * 10^6}\left(\sum_{k=1}^{p} Q_{b,k} C_{T,b,k}\right) \qquad (Eqn\ WW2)$$

Where:

QMWa, QMWb=Mass flow rate of Table 8 or Table 9 compounds, average of all runs, in wastewater entering (QMWa) or exiting (QMWb) the treatment process, kilograms per hour. ρ?=Density of the wastewater, kilograms per cubic meter. Qa,k, Qbb,k=Volumetric flow rate of wastewater entering (Qa,k) or exiting (Qb,k) the treatment process during each run k, cubic meters per hour. CT,a,k, CT,b,k=Total concentration of Table 8 or Table 9 compounds in wastewater entering (CT,a,k) or exiting (CT,b,k) the treatment process during each run k, parts per million by weight. p=Number of runs. k=Identifier for a run. 106=conversion factor, mg/kg

(4) Percent removal calculation for mass flow rate. The percent mass removal across the treatment process shall be calculated as follows:

$$E = \frac{QMW_a - QMW_b}{QMW_a} \times 100 \qquad (Eqn\ WW3)$$

Where:

E=Removal or destruction efficiency of the treatment process, percent. QMWa, QMWb=Mass flow rate of Table 8 or Table 9 compounds in wastewater entering (QMWa) and exiting (QMWb) the treatment process, kilograms per hour (as calculated using Equations WW1 and WW2).

(5) Calculation of flow-weighted average of Fr values. If complying with §§63.138(e)(2), use Equation WW8 to calculate the flow-weighted average of the Fr values listed in Table 9 of this subpart. When the term ""combustion"" is used in Equation WW8, the term ""treatment process"" shall be used for the purposes of this paragraph.

(6) Compare mass removal efficiency to required efficiency. Compare the mass removal efficiency (calculated in Equation WW3) to the required efficiency as specified in §§63.138(e) of this subpart. If complying with §§63.138(e)(1), compliance is demonstrated if the mass removal efficiency is 99 percent or greater. If complying with §§63.138(e)(2), compliance is demonstrated if the mass removal efficiency is greater than or equal to the flow-weighted average of the Fr values calculated in Equation WW8.

(d) Combustion treatment processes: percent mass removal/destruction option. This paragraph applies to performance tests that are conducted to demonstrate compliance of a combustion treatment process with the percent mass destruction limits specified in §§63.138(e) (1) and (2) for Table 9 compounds, and/or §§63.138(e)(1) for Table 8 compounds. The owner or operator shall comply with the requirements specified in §§63.145 (d)(1) through (d)(9) of this subpart. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) Concentration in wastewater stream entering the combustion treatment process. The concentration of Table 8 and/or Table 9 compounds entering the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per §§63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples.

Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 of appendix A of this part shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) Flow rate of wastewater entering the combustion treatment process. The flow rate of the wastewater stream entering the combustion treatment process shall be determined using an inlet flow meter. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Calculation of mass flow rate in wastewater stream entering combustion treatment processes. The mass flow rate of Table 8 and/or Table 9 compounds entering the treatment process is calculated as follows:

$$QMW_a = \frac{\rho}{p * 10^6}\left(\sum_{k=1}^{p} Q_{a,k} * C_{T,a,k}\right) \qquad (Eqn\ WW4)$$

Where:

QMWa=Mass flow rate of Table 8 or Table 9 compounds entering the combustion unit, kilograms per hour. ρ?=Density of the wastewater stream, kilograms per cubic meter. Qa,k=Volumetric flow rate of wastewater entering the combustion unit during run k, cubic meters per hour. CT,a,k=Total concentration of Table 8 or Table 9 compounds in the wastewater stream entering the combustion unit during run k, parts per million by weight. p=Number of runs. k=Identifier for a run.

(4) Concentration in vented gas stream exiting the combustion treatment process. The concentration of Table 8 and/or Table 9 compounds exiting the combustion treatment process in any vented gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(5) Volumetric flow rate of vented gas stream exiting the combustion treatment process. The volumetric flow rate of the vented gas stream exiting the combustion treatment process shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(6) Calculation of mass flow rate of vented gas stream exiting combustion treatment processes. The mass flow rate of Table 8 and/or Table 9 compounds in a vented gas stream exiting the combustion treatment process shall be calculated as follows:

(Eqn WW5) [Reserved]

$$QMG_b = K_2\left(\sum_{i=1}^{n} CG_{b,i} MW_i\right) QG_b \qquad (Eqn\ WW6)$$

Where:

CGa,i, CGb,i=Concentration of total organic compounds (TOC) (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (CGa,i) and exiting (CGb,i) the control device, dry basis, parts per million by volume. QMGa, QMGb=Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (QMGa) and exiting (QMGb) the control device, dry basis, kilograms per hour. MWi=Molecular weight of a component, kilogram/kilogram-mole. QGa,QGb=Flow rate of gas stream entering (QGa) and exiting (QGb) the control device, dry standard cubic meters per hour. K2=Constant, 41.57××10−-9 (parts per million)−-1 (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20 °°Celsius. i=Identifier for a compound. n=Number of components in the sample.

(7) Destruction efficiency calculation. The destruction efficiency of the combustion unit for Table 8 and/or Table 9 compounds shall be calculated as follows:

$$E = \frac{QMW_a - QMG_b}{QMW_a} * 100 \qquad (Eqn\ WW7)$$

Where:

E=Destruction efficiency of Table 8 or Table 9 compounds for the combustion unit, percent. QMWa=Mass flow rate of Table 8 or Table 9 compounds entering the combustion unit, kilograms per hour. QMGb=Mass flow rate of Table 8 or Table 9 compounds in vented gas stream exiting the combustion treatment process, kilograms per hour.

(8) Calculation of flow-weighted average of Fr values. Use Equation WW8 to calculate the flow-weighted average of the Fr values listed in table 9 of this subpart.

$$Fr_{avg} = \left[\frac{\sum_{i=1}^{n} \sum_{k=1}^{p} Fr_i * C_{i,a,k} * Q_{a,k}}{\sum_{k=1}^{p} \sum_{i=1}^{n} C_{i,a,k} * Q_{a,k}} \right] * 100 \qquad (Eqn\ WW8)$$

Where:

Fravg=Flow-weighted average of the Fr values. Ci,a,k=Concentration of Table 8 and/or Table 9 compounds in wastewater stream entering the combustion unit, during run k, parts per million by weight. Qa,k=Volumetric flow rate of wastewater entering the combustion unit during run k, cubic meters per hour. Fri=Compound-specific Fr value listed in table 9 of this subpart.

(9) Calculate flow-weighted average of Fr values and compare to mass destruction efficiency. Compare the mass destruction efficiency (calculated in Equation WW 7) to the required efficiency as specified in §§63.138(e). If complying with §§63.138(e)(1), compliance is demonstrated if the mass destruction efficiency is 99 percent or greater. If complying with §§63.138(e)(2), compliance is demonstrated if the mass destruction efficiency is greater than or equal to the flow-weighted average of the Fr value calculated in Equation WW8.

(e) Non-combustion treatment processes including closed biological treatment processes: RMR option. This paragraph applies to performance tests for non-combustion treatment processes other than open biological treatment processes to demonstrate compliance with the mass removal provisions for Table 8 and/or Table 9 compounds. Compliance options for noncombustion treatment processes are specified in §§63.138(f) of this subpart. Compliance options for closed aerobic or anaerobic biological treatment processes are specified in §§63.138(f) and §§63.138(g) of this subpart. When complying with §§63.138(f), the owner or operator shall comply with the requirements specified in §§63.145(e)(1) through (e)(6) of this subpart. When complying with §§63.138(g), the owner or operator shall comply with the requirements specified in §§63.145(e)(1) through (e)(6) of this subpart. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) Concentration in wastewater stream. The concentration of Table 8 and/or Table 9 compounds shall be determined as provided in this paragraph. Concentration measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for concentration change made according to §§63.144(b)(6) of this subpart. Concentration measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in §§63.145(a)(7) for a series of treatment processes. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per §§63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart.

Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) Flow rate. Flow rate measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for flow rate change made according to §§63.144(c)(4) of this subpart. Flow rate measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in §§63.145(a)(7) for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow measurement devices. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Calculation of RMR for non-combustion treatment processes including closed biological treatment processes. When using §§63.138(f) to comply, the required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated as specified in paragraph (e)(3)(i) of this section. When using §§63.138(g) to comply, the required mass removal shall be calculated as specified in paragraph (e)(3)(ii) of this section.

(i) When using §§63.138(f) to comply, the required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated using Equation WW9.

$$RMR = \frac{\rho}{10^9} Q \sum_{i=1}^{n} (C_i * Fr_i) \qquad (Eqn\ WW9)$$

Where:

RMR=Required mass removal for treatment process or series of treatment processes, kilograms per hour. ρ?=Density of the Group 1 wastewater stream, kilograms per cubic meter. Q=Volumetric flow rate of wastewater stream at the point of determination, liters per hour. i=Identifier for a compound. n=Number of Table 8 or Table 9 compounds in stream. Ci=Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight. Fri=Fraction removal value of a Table 8 or Table 9 compound. Fr values are listed in table 9 of this subpart. 10 9=Conversion factor, mg/kg * l/m 3.

(ii) When using §§63.138(g) to comply, the required mass removal is 95 percent of the mass flow rate for all Group 1 and Group 2 wastewater streams combined for treatment. The required mass removal of Table 8 and/or Table 9 compounds for all Group 1 and Group 2 wastewater streams combined for treatment when complying with §§63.138(g) shall be calculated using the following equation:

$$RMR = \frac{0.95\rho}{10^9} Q \sum_{i=1}^{n} (C_i) \qquad (Eqn\ WW9a)$$

Where:

RMR=Required mass removal for treatment process or series of treatment processes, kilograms per hour. ρ?=Density of the Group 1 wastewater stream, kilograms per cubic meter. Q=Volumetric flow rate of wastewater stream at the point of determination, liters per hour. i=Identifier for a compound. n=Number of Table 8 or Table 9 compounds in stream. Ci=Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight. 10 9=Conversion factor, mg/kg * l/m 3

(4)(i) The required mass removal is calculated by summing the required mass removal for each Group 1 wastewater stream to be combined for treatment when complying with §§63.138(f).

(ii) The required mass removal is calculated by summing the required mass removal for all Group 1 and Group 2 wastewater streams combined for treatment when complying with §§63.138(g).

(5) The AMR calculation procedure for non-combustion treatment processes including closed biological treatment processes. The AMR shall be calculated as follows:

$$AMR = (QMW_a - QMW_b) \qquad (Eqn\ WW10)$$

Where:

AMR=Actual mass removal of Table 8 or Table 9 compounds achieved by treatment process or series of treatment processes, kilograms per hour. QMWa=Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the treatment process or first treament process in a series of treatment processes, kilograms per hour. QMWb=Mass flow rate of Table 8 or Table 9 compounds in wastewater exiting the last treatment process in a series of treatment processes, kilograms per hour.

(6) Compare RMR to AMR. When complying with §§63.138(f), compare the RMR calculated in Equation WW9 to the AMR calculated in Equation WW10. Compliance is demonstrated if the AMR is greater than or equal to the RMR. When complying with §§63.138(g), compare the RMR calculated in Equation WW—9a to the AMR calculated in Equation WW10. Compliance is demonstrated if the AMR is greater than or equal to 95-percent mass removal.

(f) Open or closed aerobic biological treatment processes: Required mass removal (RMR) option. This paragraph applies to the use of performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the mass removal provisions for Table 8 and/or Table 9 compounds. These compliance options are specified in §§63.138(f) of this subpart. The owner or operator shall comply with the requirements specified in §§63.145 (f)(1) through (f)(6) of this subpart. Some compounds may not require a performance test. Refer to §§63.145(h) and table 36 of this subpart to determine which compounds may be exempt from the requirements of this paragraph.

(1) Concentration in wastewater stream. The concentration of Table 8 and/or Table 9 compounds shall be determined as provided in this paragraph. Concentration measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for concentration change made according to §§63.144(b)(6) of this subpart. Concentration measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in §§63.145(a)(7) for a series of treatment processes. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per §§63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) Flow rate. Flow rate measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for flow rate change made according to §§63.144(c)(4) of this subpart. Flow rate measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in §§63.145(a)(7) for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow measurement devices. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Calculation of RMR for open or closed aerobic biological treatment processes. The required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated using the following equation:

$$RMR = \frac{\rho}{10^9} Q \sum_{i=1}^{n} (C_i * Fr_i) \qquad (Eqn\ WW11)$$

Where:

RMR=Required mass removal for treatment process or series of treatment processes, kilograms per hour. ρ?=Density of the Group 1 wastewater stream, kilograms per cubic meter. Q=Volumetric flow rate of wastewater stream at the point of determination, liters per hour. i=Identifier for a compound. n=Number of Table 8 or Table 9 compounds in stream. Ci=Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

Fri=Fraction removal value of a Table 8 or Table 9 compound. Fr values are listed in table 9 of this subpart. 109=Conversion factor, mg/kg * l/m3.

(4) The required mass removal is calculated by adding together the required mass removal for each Group 1 wastewater stream to be combined for treatment.

(5) Actual mass removal calculation procedure for open or closed aerobic biological treatment processes. The actual mass removal (AMR) shall be calculated using Equation WW12 as specified in paragraph (f)(5)(i) of this section when the performance test is performed across the open or closed aerobic biological treatment process only. If compliance is being demonstrated in accordance with §§63.145(a)(7)(i), the AMR for the series shall be calculated using Equation WW13 in §§63.145(f)(5)(ii). (This equation is for situations where treatment is performed in a series of treatment processes connected by hard-piping.) If compliance is being demonstrated in accordance with §§63.145(a)(7)(ii), the AMR for the biological treatment process shall be calculated using Equation WW12 in §§63.145(f)(5)(i). The AMR for the biological treatment process used in a series of treatment processes calculated using Equation WW12 shall be added to the AMR determined for each of the other individual treatment processes in the series of treatment processes.

(i) Calculate AMR for the open or closed aerobic biological treatment process as follows:

$$AMR = QMW_a * F_{bio} \qquad (Eqn\ WW12)$$

Where:

AMR=Actual mass removal of Table 8 or Table 9 compounds achieved by open or closed biological treatment process, kilograms per hour. QMWa=Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the treatment process, kilograms per hour. Fbio=Site-specific fraction of Table 8 or Table 9 compounds biodegraded. Fbio shall be determined as specified in §§63.145(h) and appendix C of this subpart.

(ii) Calculate AMR across a series of treatment units where the last treatment unit is an open or closed aerobic biological treatment process as follows:

$$AMR = QMW_a - (QMW_b)(1 - F_{bio}) \qquad (Eqn\ WW13)$$

Where:

AMR=Actual mass removal of Table 8 or Table 9 compounds achieved by a series of treatment processes, kilograms per hour. QMWa=Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the first treatment process in a series of treatment processes, kilograms per hour. QMWb=Mass flow rate of Table 8 or Table 9 compounds in wastewater exiting the last treatment process in a series of treatment processes prior to the biological treatment process, kilograms per hour. Fbio=Site-specific fraction of Table 8 or Table 9 compounds biodegraded. Fbio shall be determined as specified in §§63.145(h) and appendix C of this subpart.

(6) Compare RMR to AMR. Compare the RMR calculated in Equation WW11 to the AMR calculated in either Equation WW12 or WW13, as applicable. Compliance is demonstrated if the AMR is greater than or equal to the RMR.

(g) Open or closed aerobic biological treatment processes: 95-percent mass removal option. This paragraph applies to performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the 95-percent mass removal provisions for Table 8 and/or Table 9 compounds. This compliance option is specified in §§63.138(g) of this subpart. The RMR for this option is 95-percent mass removal. The owner or operator shall comply with the requirements specified in §§63.145(g)(1) to determine AMR, §§63.145 (e)(3)(ii) and (e)(4)(ii) to determine RMR, and (g)(2) of this subpart to determine whether compliance has been demonstrated. Some compounds may not require a performance test. Refer to §§63.145(h) and table 36 of this subpart to determine which compounds may be exempt from the requirements of this paragraph. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) The owner or operator shall comply with the requirements specified in paragraphs (f)(1), (f)(2), and (f)(5) of this section to determine AMR. References to Group 1 wastewater streams shall be deemed Group 1 and Group 2 wastewater streams for the purposes of this paragraph.

(2) Compare RMR to AMR. Compliance is demonstrated if the AMR is greater than or equal to RMR.

(h) Site-specific fraction biodegraded (Fbio). The compounds listed in table 9 of this subpart are divided into two sets for the purpose of determining whether Fbio must be determined, and if Fbio must be determined, which procedures may be used to determine compound-specific kinetic parameters. These sets are designated as lists 1 and 2 in table 36 of this subpart.

(1) Performance test exemption. If a biological treatment process meets the requirements specified in paragraphs (h)(1)(i) and (h)(1)(ii) of this section, the owner or operator is not required to determine Fbio and is exempt from the applicable performance test requirements specified in §§63.138 of this subpart.

(i) The biological treatment process meets the definition of ""enhanced biological treatment process"" in §§63.111 of this subpart.

(ii) At least 99 percent by weight of all compounds on table 36 of this subpart that are present in the aggregate of all wastewater streams using the biological treatment process to comply with §§63.138 of this subpart are compounds on list 1 of table 36 of this subpart.

(2) Fbio determination. If a biological treatment process does not meet the requirement specified in paragraph (h)(1)(i) of this section, the owner or operator shall determine Fbio for the biological treatment process using the procedures in appendix C to part 63, and paragraph (h)(2)(ii) of this section. If a biological treatment process meets the requirements of paragraph (h)(1)(i) of this section but does not meet the requirement specified in paragraph (h)(1)(ii) of this section, the owner or operator shall determine Fbio for the biological treatment process using the procedures in appendix C to part 63, and paragraph (h)(2)(i) of this section.

(i) Enhanced biological treatment processes. If the biological treatment process meets the definition of ""enhanced biological treatment process"" in §§63.111 of this subpart and the wastewater streams include one or more compounds on list 2 of table 36 of this subpart that do not meet the criteria in paragraph (h)(1)(ii) of this section, the owner or operator shall determine fbio for the list 2 compounds using any of the procedures specified in appendix C of 40 CFR part 63. (The symbol ""fbio"" represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.) The owner or operator shall calculate fbio for the list 1 compounds using the defaults for first order biodegradation rate constants (K1) in table 37 of subpart G and follow the procedure explained in form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C, 40 CFR part 63.

(ii) Biological treatment processes that are not enhanced biological treatment processes. For biological treatment processes that do not meet the definition for ""enhanced biological treatment process"" in §§63.111 of this subpart, the owner or operator shall determine the fbio for the list 1 and 2 compounds using any of the procedures in appendix C to part 63, except procedure 3 (inlet and outlet concentration measurements). (The symbol ""fbio"" represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.)

(i) Performance tests for control devices other than flares. This paragraph applies to performance tests that are conducted to demonstrate compliance of a control device with the efficiency limits specified in §§63.139(c). If complying with the 95-percent reduction efficiency requirement, comply with the requirements specified in paragraphs (i)(1) through (i)(9) of this section. If complying with the 20 ppm by volume requirement, comply with the requirements specified in paragraphs (i)(1) through (i)(6) and (i)(9) of this section. The 20 ppm by volume limit or 95-percent reduction efficiency requirement shall be measured as either total organic hazardous air pollutants or as TOC minus methane and ethane.

(1) Sampling sites. Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate. For determination of compliance with the 95 percent reduction requirement, sampling sites shall be located at the inlet and the outlet of the control device. For determination of compliance with the 20 parts per million by volume limit, the sampling site shall be located at the outlet of the control device.

(2) Concentration in gas stream entering or exiting the control device. The concentration of total organic hazardous air pollutants or TOC in a gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples (i.e., integrated samples). Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(3) Volumetric flow rate of gas stream entering or exiting the control device. The volumetric flow rate of the gas stream shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(4) Calculation of TOC concentration. The TOC concentration (CGT) is the sum of the concentrations of the individual components. If compliance is being determined based on TOC, the owner or operator shall compute TOC for each run using the following equation:

$$CG_T = \frac{1}{m}\sum_{j=1}^{m}\left(\sum_{i=1}^{n} CGS_{i,j}\right) \qquad (Eqn\ WW14)$$

Where:

CGT=Total concentration of TOC (minus methane and ethane) in vented gas stream, average of samples, dry basis, parts per million by volume. CGSi,j=Concentration of sample components in vented gas stream for sample j, dry basis, parts per million by volume. i=Identifier for a compound. n=Number of components in the sample. j=Identifier for a sample. m=Number of samples in the sample run.

(5) Calculation of total organic hazardous air pollutants concentration. The owner or operator determining compliance based on total organic hazardous air pollutants concentration (CHAP) shall compute CHAP according to the Equation WW14, except that only Table 9 compounds shall be summed.

(6) Percent oxygen correction for combustion control devices. If the control device is a combustion device, comply with the requirements specified in paragraph (i)(6)(i) of this section to determine oxygen concentration, and in paragraph (i)(6)(ii) of this section to calculate the percent oxygen correction.

(i) Oxygen concentration. The concentration of TOC or total organic hazardous air pollutants shall be corrected to 3 percent oxygen if the control device is a combustion device. The emission rate correction factor for excess air, composite sampling (i.e., integrated sampling) and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the actual oxygen concentration (%02d). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic hazardous air pollutants samples are taken.

(ii) 3 percent oxygen calculation. The concentration corrected to 3 percent oxygen (CGc), when required, shall be computed using the following equation:

$$CG_C = CG_T\left(\frac{17.9}{20.9 - \%0_{2d}}\right) \qquad (Eqn\ WW15)$$

Where:

CGc=Concentration of TOC or organic hazardous air pollutants corrected to 3 percent oxygen, dry basis, parts per million by volume. CGT=Total concentration of TOC (minus methane and ethane) in vented gas stream, average of samples, dry basis, parts per million by volume. %02d=Concentration of oxygen measured in vented gas stream, dry basis, percent by volume.

(7) Mass rate calculation. The mass rate of either TOC (minus methane and ethane) or total organic hazardous air pollutants shall be calculated using the following equations. Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by methods specified in paragraph (i)(2) of this section are summed using Equations WW16 and WW17. Where the mass rate of total organic hazardous air pollutants is being calculated, only Table 9 compounds shall be summed using Equations WW16 and WW17.

$$QMG_a = K_2\left(\sum_{i=1}^{n} CG_{a,i}\ MW_i\right)QG_a \qquad (Eqn\ WW16)$$

$$QMG_b = K_2 \left(\sum_{i=1}^{n} CG_{b,i} \; MW_i \right) QG_b \qquad (Eqn\ WW17)$$

Where:

CGa,i, CGb,i=Concentration of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (CGa,i) and exiting (CGb,i) the control device, dry basis, parts per million by volume. QMGa, QMGb=Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (QMGa) and exiting (QMGb) the control device, dry basis, kilograms per hour. MWi=Molecular weight of a component, kilogram/kilogram-mole. QGa, QGb=Flow rate of gas stream entering (QGa) and exiting (QGb) the control device, dry standard cubic meters per hour. K2=Constant, 41.57××10−-9 (parts per million)−-1 (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20 °°Celsius. i=Identifier for a compound. n=Number of components in the sample.

(8) Percent reduction calculation. The percent reduction in TOC (minus methane and ethane) or total organic hazardous air pollutants shall be calculated as follows:

$$E = \frac{QMG_a - QMG_b}{QMG_a} (100\%) \qquad (Eqn\ WW18)$$

Where:

E=Destruction efficiency of control device, percent. QMGa, QMGb=Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream entering and exiting (QMGb) the control device, dry basis, kilograms per hour.

(9) Compare mass destruction efficiency to required efficiency. If complying with the 95 percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation WW18) is 95 percent or greater. If complying with the 20 parts per million by volume limit in §§63.139 (c)(1)(ii) of this subpart, compliance is demonstrated if the outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration is 20 parts per million by volume, or less. For combustion control devices, the concentration shall be calculated on a dry basis, corrected to 3 percent oxygen.

(j) When a flare is used to comply with §§63.139(c), the owner or operator shall comply with paragraphs (j)(1) through (3) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.

(1) Conduct a visible emission test using the techniques specified in §§63.11(b)(4).

(2) Determine the net heating value of the gas being combusted using the techniques specified in §§63.11(b)(6).

(3) Determine the exit velocity using the techniques specified in either §§63.11(b)(7)(i) (and §§63.11(b)(7)(iii), where applicable) or §§63.11(b)(8), as appropriate.

1.ff Section 63.147 Process wastewater provisions -- record keeping.

(a) The owner or operator transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with §§63.132(g) of this subpart shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic hazardous air pollutants which are required to be managed and treated in accordance with the provisions of this subpart.

(b) The owner or operator shall keep in a readily accessible location the records specified in paragraphs (b)(1) through (8) of the section.

(1) A record that each waste management unit inspection required by §§§§63.133 through 63.137 of this subpart was performed.

(2) A record that each inspection for control devices required by §§63.139 of this subpart was performed.

(3) A record of the results of each seal gap measurement required by §§§§63.133(d) and 63.137(c) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in §§63.120(b)(2), (3), and (4) of this subpart.

(4) For Item 1 and Item 3 of table 12 of this subpart, the owner or operator shall keep the records approved by the Administrator.

(5) Except as provided in paragraph (e) of this section, continuous records of the monitored parameters specified in Item 2 of table 12 and table 13 of this subpart, and in §§63.143(e)(2) of this subpart.

(6) Documentation of a decision to use an extension, as specified in §§63.133(e)(2) or (h) of this subpart, which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

(7) Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in §§63.140(c), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept on site and when the manufacturer promised delivery), and the date when repair was completed.

(8) Requirements for Group 2 wastewater streams. This paragraph (b)(8) does not apply to Group 2 wastewater streams that are used to comply with §§63.138(g). For all other Group 2 wastewater streams, the owner or operator shall keep in a readily accessible location the records specified in paragraphs (b)(8)(i) through (iv) of this section.

(i) Process unit identification and description of the process unit.

(ii) Stream identification code.

(iii) For existing sources, concentration of table 9 compound(s) in parts per million, by weight. For new sources, concentration of table 8 and/or table 9 compound(s) in parts per million, by weight. Include documentation of the methodology used to determine concentration.

(iv) Flow rate in liter per minute.

(c) For each boiler or process heater used to comply with §§§§63.133 through 63.139 of this subpart, the owner or operator shall keep a record of any changes in the location at which the vent stream is introduced into the flame zone as required in §§63.139(c)(1) of this subpart.

(d) The owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day as specified in §§63.152(f), except as provided in paragraphs (d)(1) through (3) of this section.

(1) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.

(2) Regenerative carbon adsorbers. For regenerative carbon adsorbers, the owner or operator shall keep the records specified in paragraphs (d)(2)(i) and (ii) of this section instead of daily averages.

(i) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle.

(ii) Records of the temperature of the carbon bed after each regeneration cycle.

(3) Non-regenerative carbon adsorbers. For non-regenerative carbon adsorbers using organic monitoring equipment, the owner or operator shall keep the records specified in paragraph (d)(3)(i) of this section instead of daily averages. For non-regenerative carbon adsorbers replacing the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system, the owner or operator shall keep the records specified in paragraph (d)(3)(ii) of this section instead of daily averages.

(i)(A) Record of how the monitoring frequency, as specified in table 13 of this subpart, was determined.

(B) Records of when organic compound concentration of adsorber exhaust was monitored.

(C) Records of when the carbon was replaced.

(ii)(A) Record of how the carbon replacement interval, as specified in table 13 of this subpart, was determined.

(B) Records of when the carbon was replaced.

(e) Where the owner or operator obtains approval to use a control device other than one for which monitoring requirements are specified in §§63.143 of this subpart, or to monitor parameters other than those specified in table 12 or table 13 of this subpart, the Administrator will specify appropriate recordkeeping requirements.

(f) If the owner or operator uses process knowledge to determine the annual average concentration of a wastewater stream as specified in §§63.144(b)(3) of this subpart and/or uses process knowledge to determine the annual average flow rate as specified in §§63.144(c)(1) of this subpart, and determines that the wastewater stream is not a Group 1 wastewater stream, the owner or operator shall keep in a readily accessible location the documentation of how process knowledge was used to determine the annual average concentration and/or the annual average flow rate of the wastewater stream.

1.gg Section 63.148 Leak inspection provisions.

(a) Except as provided in paragraph (k) of this section, for each vapor collection system, closed-vent system, fixed roof, cover, or enclosure required to comply with this section, the owner or operator shall comply with the requirements of paragraphs (b) through (j) of this section.

(b) Except as provided in paragraphs (g) and (h) of this section, each vapor collection system and closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (b)(1) and (b)(2) of this section and each fixed roof, cover, and enclosure shall be inspected according to the procedures and schedule specified in paragraph (b)(3) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct annual inspections according to the procedures in paragraph (c) of this section.

(iii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(3) For each fixed roof, cover, and enclosure, the owner or operator shall conduct initial visual inspections and semi-annual visual inspections for visible, audible, or olfactory indications of leaks as specified in sections 63.133 through 63.137 of this subpart.

(c) Each vapor collection system and closed vent system shall be inspected according to the procedures specified in paragraphs (c)(1) through (c)(5) of this section.

(1) Inspections shall be conducted in accordance with Method 21 of 40 CFR Part 60, Appendix A.

(2)(i) Except as provided in paragraph (c)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR Part 60, Appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual volatile organic compound in the stream. For process streams that contain nitrogen, air, or other inerts which are not organic hazardous air pollutants or volatile organic compounds, the average stream response factor shall be calculated on an inert-free basis.

(ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (c)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (c)(2)(i) of this section.

(3) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR Part 60, Appendix A.

(4) Calibration gases shall be as follows:

(i) Zero air (less than 10 parts per million hydrocarbon in air); and

(ii) Mixtures of methane in air at a concentration less than 10,000 parts per million. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (c)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(5) An owner or operator may elect to adjust or not adjust instrument readings for background. If an owner or operator elects to not adjust readings for background, all such instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall measure background concentration using the procedures in sections 63.180(b) and (c) of Subpart H of this part. The owner or operator shall subtract background reading from the maximum concentration indicated by the instrument.

(6) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining compliance.

(d) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (e) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (d)(3) of this section.

(3) For leaks found in vapor collection systems used for transfer operations, repairs shall be completed no later than 15 calendar days after the leak is detected or at the beginning of the next transfer loading operation, whichever is later.

(e) Delay of repair of a vapor collection system, closed vent system, fixed roof, cover, or enclosure for which leaks have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in section 63.101 of Subpart F of this part, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next shutdown.

(f) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (f)(1) or (f)(2) of this section, except as provided in paragraph (f)(3) of this section.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be generated as specified in section 63.118(a)(3) of this subpart. The flow indicator shall be installed at the entrance to any bypass line; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(3) Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(g) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (b)(1), (b)(2), or (b)(3)(i) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(h) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(i) The owner or operator shall record the information specified in paragraphs (i)(1) through (i)(5) of this section.

(1) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (i)(3)(i) or (i)(3)(ii) of this section.

(i) Hourly records of whether the flow indicator specified under paragraph (f)(1) of this section was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(ii) Where a seal mechanism is used to comply with paragraph (f)(2) of this section, hourly records of flow are not required. In such cases, the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has broken.

(4) For each inspection during which a leak is detected, a record of the information specified in paragraphs (i)(4)(i) through (i)(4)(viii) of this section.

(i) The instrument identification numbers; operator name or initials; and identification of the equipment.

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

(iii) Maximum instrument reading measured by the method specified in paragraph (d) of this section after the leak is successfully repaired or determined to be nonrepairable.

(iv) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(v) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.

(vi) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(vii) Dates of shutdowns that occur while the equipment is unrepaired.

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

(5) For each inspection conducted in accordance with paragraph (c) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(6) For each visual inspection conducted in accordance with paragraph (b)(1)(ii) or (b)(3)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(j) The owner or operator shall submit with the reports required by section 63.182(b) of Subpart H of this part or with the reports required by section 63.152(c) of this subpart, the information specified in paragraphs (j)(1) through (j)(3) of this section.

(1) The information specified in paragraph (i)(4) of this section;

(2) Reports of the times of all periods recorded under paragraph (i)(3)(i) of this section when the vent stream is diverted from the control device through a bypass line; and

(3) Reports of all periods recorded under paragraph (i)(3)(ii) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

(k) If a closed-vent system subject to this section is also subject to section 63.172 of Subpart H of this part, the owner or operator shall comply with the provisions of section 63.172 of Subpart H of this part and is exempt from the requirements of this section.

1.hh Section 63.149 Control requirements for certain liquid streams in open systems within a chemical manufacturing process unit.

(a) The owner or operator shall comply with the provisions of table 35 of this subpart, for each item of equipment meeting all the criteria specified in paragraphs (b) through (d) and either paragraph (e)(1) or (e)(2) of this section.

(b) The item of equipment is of a type identified in table 35 of this subpart;

(c) The item of equipment is part of a chemical manufacturing process unit that meets the criteria of §§63.100(b) of subpart F of this part;

(d) The item of equipment is controlled less stringently than in table 35 and is not listed in §§63.100(f) of subpart F of this part, and the item of equipment is not otherwise exempt from controls by the provisions of subparts A, F, G, or H of this part; and

(e) The item of equipment:

(1) is a drain, drain hub, manhole, lift station, trench, pipe, or oil/water separator that conveys water with a total annual average concentration greater than or equal to 10,000 parts per million by weight of Table 9 compounds at any flowrate; or a total annual average concentration greater than or equal to 1,000 parts per million by weight of Table 9 compounds at an annual average flow rate greater than or equal to 10 liters per minute. At a chemical manufacturing process unit subject to the new source requirements of 40 CFR 63.100(l)(1) or 40 CFR 63.100(l)(2), the criteria of this paragraph are also met if the item of equipment conveys water with an annual average concentration greater than or equal to 10 parts per million by weight of any Table 8 compound at an annual average flow rate greater than or equal to 0.02 liter per minute, or

(2) Is a tank that receives one or more streams that contain water with a total annual average concentration greater than or equal to 1,000 ppm (by weight) of Table 9 compounds at an annual average flowrate greater than or equal to 10 liters per minute. At a chemical manufacturing process unit subject to the new source requirements of 40 CFR 63.100(l)(1) or 40 CFR 63.100 (l)(2), the criteria of this paragraph are also met if the tank receives one or more streams that contain water with an annual average concentration greater than or equal to 10 parts per million by weight of any Table 8 compound at an annual average flow rate greater than or equal to 0.02 liter per minute. The owner or operator of the source shall determine the characteristics of the stream as specified in paragraphs (e)(2) (i) and (ii) of this section.

(i) The characteristics of the stream being received shall be determined at the inlet to the tank.

(ii) The characteristics shall be determined according to the procedures in §§63.144 (b) and (c).

1.ii Section 63.150 Emissions averaging provisions.

(a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in §§63.112(a) of this subpart by using emissions averaging according to §§63.112(f) of this subpart rather than following the provisions of §§§§63.113 through 63.148 of this subpart. Notwithstanding the definition of process vent in §§63.101 and the sampling site designation in §§63.115(a), for purposes of this section the location of a process vent shall be defined, and the characteristics of its gas stream shall be determined, consistent with paragraph (g)(2)(i) of this section.

(b) Unless an operating permit application has been submitted, the owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in §§63.151(d) of this subpart for all points to be included in an emissions average. The Implementation Plan or operating permit application shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in §§63.111 of this subpart) is not applied and all other emission points being controlled as part of the average.

(c) The following emission points can be used to generate emissions averaging credits, if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point:

(1) Group 2 emission points.

(2) Group 1 emission points that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section.

(3) Emission points from which emissions are reduced by pollution prevention measures. Percent reductions for pollution prevention measures shall be determined as specified in paragraph (j) of this section.

(i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990, unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990.

(2) Group 1 emission points that are controlled by a reference control technology, unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting the specifications of §§63.119(b) of this subpart applied to a storage vessel is achieving greater than 95 percent control.

(3) Emission points on shut-down process units. Process units that are shut down cannot be used to generate credits or debits.

(4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. For the purposes of this section, the terms wastewater and wastewater stream are used to mean process wastewater.

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(e) For all points included in an emissions average, the owner or operator shall:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The owner or operator may choose to include more than the required number of credit-generating emission points in an average in order to increase the likelihood of being in compliance.

(ii) The initial demonstration in the Implementation Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions. After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in §§63.152(c) of this subpart. Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by §§63.152(c)(5)(iv)(B) of this subpart.

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:

(1) More than 20 individual Group 1 or Group 2 emission points. Where pollution prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.

(2) Periods of start-up, shutdown, and malfunction as described in the source's start-up, shutdown, and malfunction plan required by §§63.6(e)(3) of subpart A of this part.

(3) Periods of monitoring excursions as defined in §§63.152(c)(2)(ii)(A) of this subpart. For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

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

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

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

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the reference control technology, and the emissions allowed for the Group 1 emission point. Debits shall be calculated as follows:

(1) The overall equation for calculating source-wide debits is:

$$Debits = \sum_{i=1}^{n}\left(EPV_{iACTUAL} - (0.02)EPV_{iu}\right) + \sum_{i=1}^{n}\left(ES_{iACTUAL} - (0.05)ES_{iu}\right) + \sum_{i=1}^{n}\left(ETR_{iACTUAL} - (0.02)ETR_{iu}\right) + \sum_{i=1}^{n}\left(EWW_{iACTUAL} - EWW_{ic}\right)$$

where:

Debits and all terms of the equation are in units of megagrams per month, and EPViACTUAL=Emissions from each Group 1 process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section. (0.02) EPViu=Emissions from each Group 1 vent i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section. ESiACTUAL=Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section. (0.05) ESiu=Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(3) of this section. ETRiACTUAL=Emissions from each Group 1 transfer rack i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section. (0.02) ETRiu=Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(4) of this section. EWWiACTUAL=Emissions from each Group 1 wastewater stream i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section. EWWic=Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(5) of this section. n=The number of emission points being included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

(2) Emissions from process vents shall be calculated according to paragraphs (g)(2)(i) through (iii) of this section.

(i) The location of a process vent shall be defined, and the characteristics of its gas stream shall be determined at a point that meets the conditions in either paragraph (g)(2)(i)(A) or (B) of this section and the conditions in paragraphs (g)(2)(i)(C) through (E) of this section.

(A) The point is after the final recovery device (if any recovery devices are present).

(B) If a gas stream included in an emissions average is combined with one or more other gas streams after a final recovery device (if any recovery devices are present), then for each gas stream, the point is at a representative point after any final recovery device and as near as feasible to, but before, the point of combination of the gas streams.

(C) The point is before any control device (for process vents, recovery devices shall not be considered control devices).

(D) The point is before discharge to the atmosphere.

(E) The measurement site for determination of the characteristics of the gas stream was selected using Method 1 or 1A of 40 CFR part 60, appendix A.

(ii) The following equation shall be used for each process vent i to calculate EPViu:

$$EPV_{iu} = (2.494 \times 10^{-9})\, Qh \left(\sum_{j=1}^{n} C_j M_j \right)$$

where:

EPViu=Uncontrolled process vent emission rate from process vent i, megagrams per month. Q=Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate. h=Monthly hours of operation during which positive flow is present in the vent, hours per month. Cj=Concentration, parts per million by volume, dry basis, of organic HAP j as measured by Method 18 of part 60, appendix A. Mj=Molecular weight of organic HAP j, gram per gram-mole. n=Number of organic HAP's.

(A) The values of Q, Cj, and Mj shall be determined during a performance test conducted under representative operating conditions. The values of Q, Cj, and Mj shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q, Cj, and Mj are no longer representative, a new performance test shall be conducted to determine new representative values of Q, Cj, and Mj. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate EPViACTUAL:

(A) If the vent is not controlled by a control device or pollution prevention measure, EPViACTUAL = EPViu, where EPViu is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

$$EPV_{iACTUAL} = EPV_{iu} \times \left(1 - \frac{Percent\ reduction}{100\%} \right)$$

(1) The percent reduction shall be measured according to the procedures in §§63.116 of this subpart if a combustion control device is used. For a flare meeting the criteria in §§63.116(a) of this subpart, or a boiler or process heater meeting the criteria in §§63.116(b) of this subpart, the percent reduction shall be 98 percent. If a non-combustion control device is used, percent reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(2) For determining debits from Group 1 process vents, recovery devices shall not be considered control devices and cannot be assigned a percent reduction in calculating EPViACTUAL. The sampling site for measurement of uncontrolled emissions is after the final recovery device. However, as provided in §§63.113(a)(3), a Group 1 process vent may add sufficient recovery to raise the TRE index value above 1.0, thereby becoming a Group 2 process vent.

(3) Procedures for calculating the percent reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated as follows:

(i) The following equation shall be used for each storage vessel i to calculate ESiu:

$$ES_{iu} = \frac{L_B + L_W}{12}$$

where:

ESiu=Uncontrolled emissions, defined as emissions from a fixed roof vessel having identical dimensions and vessel color as vessel i, megagrams per month. LB=Breathing loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(A) of this section. LW=Working loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(B) of this section. 12=Constant, months per year.

(A) Breathing loss emissions shall be calculated using the following equation:

$$L_B = 1.02 \times 10^{-5} M_v \left(\frac{P}{P_A - P} \right) 0.68_D 1.73_H 0.51_{\Delta T} 0.50_{F_p C K_C}$$

where:

Mv=Molecular weight of vapor in storage vessel, pound per pound-mole. PA=Average atmospheric pressure, pounds per square inch absolute. P=True vapor pressure of the HAP at liquid storage temperature, pounds per square inch absolute. See table 21 of this subpart. D = Tank diameter, feet. H=Average vapor space height, feet. Use vessel-specific values or an assumed value of one-half the height. Δ? T=Average ambient diurnal temperature change, °°F. A typical value of 20 °°F may be used. Fp=Paint factor, dimensionless, from table 22 of this subpart; use Fp=1 for vessels located indoors. C=Adjustment factor for small diameter tanks, dimensionless; use C=1 for diameter ≥=30 feet; use C = 0.0771D −- 0.0013D2 −- 0.1334 for diameter <30 feet. KC=Product factor, dimensionless. Use 1.0 for organic HAP's.

(B) Working losses shall be calculated using the following equation:

LW=1.089 ×× 10−-8 Mv (P)(V)(N) (KN) (KC)

where:

V=Tank capacity, gallon. N=Number of turnovers per year. KN=Turnover factor, dimensionless, and

$$K_N = \frac{180 + N}{6N} \; for \text{ turnovers} > 36$$

$$K_N = 1 \text{ for turnovers} \leq 36.$$

Mv, P, and KC as defined in paragraph (g)(3)(i)(A) of this section.

(C) The owner or operator may elect to calculate ESiu in accordance with the methods described in American Petroleum Institute Publication 2518, Evaporative Loss from Fixed-Roof Tanks (incorporated by reference as specified in §§63.14 of this part).

(1) The owner or operator who elects to use these alternative methods must use them for all storage vessels included in the emissions average as debit or credit generating points.

(2) The equations of paragraphs (g)(3)(i)(A) and (g)(3)(i)(B) of this section shall not be used in conjunction with the alternative methods provided under paragraph (g)(3)(i)(C) of this section.

(ii) The following procedures and equations shall be used for each fixed roof storage vessel i that is not controlled with a floating roof to calculate ESiACTUAL:

(A) If the vessel is not controlled, ESiACTUAL = ESiu, where ESiu is calculated according to the procedures in paragraph (g)(3)(i) of this section.

(B) Except as provided in paragraph (g)(3)(ii)(C) of this section, if the vessel is controlled using a control device or pollution prevention measure achieving less than 95-percent reduction,

$$ES_{iACTUAL} = ES_{iu} * \left(\frac{1 - Percent\ reduction}{100} \right)$$

(1) The percent reduction for a control device shall be determined through a design evaluation according to the procedures specified in §§63.120(d) of this subpart.

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(C) If the vessel is controlled according to the provisions of §§63.119(e)(2) of this section whereby the control device is only required to achieve at least 90-percent reduction, the vessel shall not be considered to be generating debits.

(iii) The following equation shall be used for each internal floating roof vessel i that does not meet the specifications of §§63.119(b) or (d) of this subpart to calculate ESiACTUAL:

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F + L_D}{12}$$

where:

LW=Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(A) of this section. LR=Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(B) of this section. LF=Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(C) of this section. LD=Deck seam loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(D) of this section. 12=Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{1.018 \times 10^{-5} QCW_L}{D} \left[1 + \left(\frac{N_c F_c}{D} \right) \right]$$

where:

Q=Throughput, gallon per year; (gallon/turnover) * (turnovers per year). C=Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart. WL=Average liquid density, pound per gallon. D=Tank diameter, feet. Nc=Number of columns, dimensionless, see table 24 of this subpart. Fc=Effective column diameter, feet [column perimeter (feet)÷÷3.1416], see table 25 of this subpart.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^n P^* D M_v K_c}{2,205}$$

where:

Mv=Molecular weight of vapor in storage vessel, pound per pound-mole. D=Tank diameter, feet. Kc=Product factor, dimensionless; use 1.0 for organic HAP's. Ks=Seal factor, pound-mole per [foot (miles per hour)n year], see table 26 of this subpart. V=Average wind speed at the source, miles per hour. A value of 10 miles per hour may be assumed if source-specific data are not available. n=Seal related wind speed exponent, dimensionless, see table 26 of this subpart.

2,205=Constant, pounds per megagram. P*=Vapor pressure function, dimensionless, and

$$P^* = \frac{\frac{P}{P_A}}{\left[1 + \left(1 - \frac{P}{P_A}\right)0.5\right]^2}$$

where:

PA=Average atmospheric pressure, pounds per square inch absolute. P=True vapor pressure at liquid storage temperature, pounds per square inch absolute.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_f P^* M_v K_c}{2,205}$$

where:

Ff=The total deck fitting loss factor, pound-mole per year, and

where:

$$F_f = \sum_{i=1}^{n}\left(N_{F_i} K_{F_i}\right) = \left[\left(N_{F_1} K_{F_1}\right) + \left(N_{F_2} K_{F_2}\right) + \ldots + \left(N_{F_n} K_{F_n}\right)\right]$$

NFi=Number of fittings of a particular type, dimensionless. NFi is determined for the specific tank or estimated from tables 24 and 27 of this subpart. KFi=Deck fitting loss factor for a particular type fitting, pound-mole per year. KFi is determined for each fitting type from table 27 of this subpart. n=Number of different types of fittings, dimensionless. P*, Mv, Kc, and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(D) Deck seam loss emissions shall be calculated using the following equation:

$$L_D = \frac{K_D S_D D^2 P^* M_v K_c}{2,205}$$

where:

KD=Deck seam loss factor, pound-mole per foot per year, and KD=0.34 for non-welded decks. KD=0 for welded decks. SD=Deck seam length factor, feet per square foot, see table 28 of this subpart. D, P*, Mv, Kc, and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(iv) The following equation shall be used for each external floating roof vessel i that does not meet the specifications of §§63.119(c) of this subpart to calculate ESiACTUAL:

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F}{12}$$

where:

LW=Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(A) of this section. LR=Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(B) of this section.

LF=Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(C) of this section. 12=Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{4.28 * 10^{-4} QCW_L}{D}$$

where:

Q=Throughput, gallons per year. C=Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart. WL=Average liquid density, pound per gallon. D=Vessel diameter, feet.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^N P^* D M_v K_c}{2,205}$$

where:

Ks=Seal factor, pound-mole per [foot (miles per hour)N year], see table 29 of this subpart. V=Average wind speed, miles per hour, at the source. A value of 10 miles per hour may be assumed if source-specific data are not available. N=Seal wind speed exponent, dimensionless, see table 29 of this subpart. P*=Vapor pressure function, dimensionless, as defined in paragraph (g)(3)(iii)(B) of this section. D=Vessel diameter, feet. MV=Molecular weight of the HAP, pound per pound-mole. Kc=Product factor, dimensionless; use 1.0 for organic HAP's. 2,205=Constant, pounds per megagram.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_F P^* M_v K_c}{2,205}$$

where:

FF=The total deck fitting loss factor, pound-mole per year, and

$$F_F = \sum_{i=1}^{n} \left(N_{F_i} K_{F_i} \right) = \left[\left(N_{F_1} K_{F_1} \right) + \left(N_{F_2} K_{F_2} \right) + \ldots + \left(N_{F_n} K_{F_n} \right) \right]$$

where:

NFi=Number of fittings of a particular type, dimensionless. NFi is determined for the specific tank or estimated from tables 30 through 32 of this subpart. KFi=Deck fitting loss factor for a particular type fitting, pound-mole per year, and KFi=KFai+KFbi Vmi, pound-mole per year, see table 30 of this subpart for the appropriate values of KFa, KFb, and m for each fitting type. V, P*, Mv, Kc, and 2,205 as defined in paragraph (g)(3)(iv)(B) of this section.

(4) Emissions from transfer racks shall be calculated as follows:

(i) The following equation shall be used for each transfer rack i to calculate ETRiu:

$$ETR_{iu} = \left(1.20 \times 10^{-7}\right) \frac{SPMG}{T}$$

where:

ETRiu=Uncontrolled transfer HAP emission rate from transfer rack i, megagrams per month. S=Saturation factor, dimensionless (see table 33 of this subpart). P=Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals. M = Weighted average molecular weight of organic HAP's transferred at the transfer rack during the month, gram per gram-mole. G = Monthly volume of organic HAP's transferred, liters per month. T = Weighted rack bulk liquid loading temperature during the month, Kelvin (°°C + 273).

(ii) The following equation shall be used for each transfer rack i to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{1}^{j=n} (P_j)(G_j)}{G}$$

where:

Pj = Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals. G = Monthly volume of organic HAP transferred, liters per month, and $G = \sum_{1}^{j=n} G_j$ Gj = Monthly volume of individual organic HAP transferred at the transfer rack, liters per month. n = Number of organic HAP's transferred at the transfer rack.

(iii) The following equation shall be used for each transfer rack i to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{1}^{j=n} (M_j)(G_j)}{G}$$

where:

Mj = Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole. G, Gj, and n as defined in paragraph (g)(4)(ii) of this section.

(iv) The following equation shall be used for each transfer rack i to calculate the monthly weighted rack bulk liquid loading temperature:

$$T = \frac{\sum_{1}^{j=n} (T_j)(G_j)}{G}$$

where:

Tj = Average annual bulk temperature of individual organic HAP loaded at the transfer rack, Kelvin (°°C + 273).

G, Gj, and n as defined in paragraph (g)(4)(ii) of this section.

(v) The following procedures and equations shall be used to calculate ETRiACTUAL:

(A) If the transfer rack is not controlled, ETRiACTUAL = ETRiu, where ETRiu is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the transfer rack is controlled using a control device or a pollution prevention measure achieving less than the 98-percent reduction,

$$ETR_{iACTUAL} = ETR_{iu}\left(\frac{1 - Percent\ reduction}{100\%}\right)$$

(1) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §§63.128(a) of this subpart. For a flare meeting the criteria in §§63.128(b) of this subpart or a boiler or process heater meeting the criteria in §§63.128(c) of this subpart, the percent reduction shall be 98 percent. If testing is not feasible, percent reduction shall be determined through a design evaluation according to the procedures specified in §§63.128(h) of this subpart.

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from wastewater shall be calculated as follows:

(i) The following equation shall be used for each wastewater stream i to calculate EWWic:

$$EWW_{ic} = \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{s}\left(1 - Fr_m\right) Fe_m HAP_{im}$$
$$+ \left(0.05\right)\left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{s}\left(Fr_m HAP_{im}\right)$$

where:

EWWic = Monthly wastewater stream emission rate if wastewater stream i is controlled by the reference control technology, megagrams per month. Qi = Average flow rate for wastewater stream i, as determined by the procedure in §§63.144(c)(3), liters per minute. Hi = Number of hours during the month that wastewater stream i was generated, hours per month. s = Total number of table 9 HAP in wastewater stream i. Frm = Fraction removed of table 9 HAP m in wastewater, from table 9, dimensionless. Fem = Fraction emitted of table 9 HAP m in wastewater, from table 34, dimensionless. HAPim = Average concentration of table 9 HAP m in wastewater stream i, parts per million by weight.

(A) HAPim shall be determined for the point of determination or, at a location downstream of the point of determination and adjusted according as specified in §§63.144(b)(6) of this subpart, by developing and using the sampling plan specified in §§63.144(b)(5)(ii) of this subpart. The samples collected may be analyzed by any of the methods specified in §§63.144(b)(5)(i)(B) through (b)(5)(i)(F) of this subpart. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed on table 34 of this subpart. Concentration measurements other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in table 34 of this subpart.

(B) Values for Qi, HAPim, and Cim shall be determined during a performance test conducted under representative conditions as specified in §§63.145(a)(3) and (a)(4) of this subpart. The average value obtained from three test runs shall be used. The values of Qi, HAPim, and Cim shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(5)(i)(C) of this section.

(C) If there is a change to the process or operation such that the previously measured values of Qi, HAPim, and Cim are no longer representative, a new performance test shall be conducted to determine new representative values of Qi, HAPim, and Cim. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(ii) The following equation shall be used to calculate EWWiACTUAL for each wastewater stream i that is not managed according to the provisions for waste management units of §§§§63.133 through 63.137 of this subpart, as applicable, which specify equipment and work practices for suppressing and controlling vapors. Qi, Hi, s, Fem, and HAPim are as defined and determined according to paragraph (g)(5)(i) of this section.

$$EWW_{iACTUAL} = \left(6.0 \times 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} Fe_m HAP_{im}$$

Where:

EWWiACTUAL = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

(iii) The following equation shall be used to calculate EWWiACTUAL for each wastewater stream i that is managed according to the requirements of §§§§63.133 through 63.137 of this subpart, as applicable, and wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology (for the purposes of the wastewater emissions averaging provisions, the term control is used to mean treatment). Qi, Hi, s, Fem, and HAPim are as defined and determined according to paragraph (g)(5)(i) of this section.

$$EWW_{iACTUAL} = \left(6.0 * 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[Fe_m HAP_{im} \left(1 - PR_{im}\right) \right] + \left(1 - \frac{R_i}{100\%}\right) \left(6.0 * 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left(HAP_{im} PR_{im}\right)$$

Where:

EWWiACTUAL = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month. PRim = The efficiency of the treatment process, or series of treatment processes, which treat wastewater stream i, in reducing the emission potential of table 9 HAP m in wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{HAP_{im-in} - HAP_{im-out}}{HAP_{im-in}}$$

Where:

HAPim-in = Average concentration of table 9 HAP m, parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater entering the first treatment process in the series. HAPim-out = Average concentration of table 9 HAP m, parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater exiting the last treatment process in the series. Ri = Reduction efficiency of the device used to control any vapor streams emitted and collected from wastewater stream i during treatment, dimensionless, as determined according to the procedures in §§63.145(i) or (j) of this subpart.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating source-wide credits is:

$$Credits = D\sum_{i=1}^{n}\left((0.02)\ EPV1_{iu} - EPV1_{iACTUAL}\right) + D\sum_{i=1}^{m}(EPV2_{iBASE} - EPV2_{iACTUAL}) + D\sum_{i=1}^{n}$$

$$\left((0.05)\ ES1_{iu} - ES1_{iACTUAL}\right) + D\sum_{i=1}^{m}(ES2_{iBASE} - ES2_{iACTUAL}) + D\sum_{i=1}^{n}\left((0.02)\ ETR1_{iu} - ETR1_{iACTUAL}\right)$$

$$+D\sum_{i=1}^{m}(ETR2_{iBASE} - ETR2_{iACTUAL}) + D\sum_{i=1}^{n}(EWW1_{ic} - EWW1_{iACTUAL}) + D\sum_{i=1}^{m}(EWW2_{iBASE} - EWW2_{iACTUAL})$$

where:

Credits and all terms of the equation are in units of megagrams per month, the baseline date is November 15, 1990, and: D=Discount factor=0.9 for all credit generating emission points except those controlled by a pollution prevention measure, which will not be discounted. EPV1iACTUAL=Emissions for each Group 1 process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section. (0.02) EPV1iu=Emissions from each Group 1 process vent i if the reference control technology had been applied to the uncontrolled emissions. EPV1iu is calculated according to paragraph (h)(2) of this section. EPV2iACTUAL=Emissions from each Group 2 process vent i that is controlled, calculated according to paragraph (h)(2) of this section. EPV2iBASE=Emissions from each Group 2 process vent i at the baseline date, as calculated in paragraph (h)(2) of this section. ES1iACTUAL=Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section. (0.05) ES1iu=Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. ES1iu is calculated according to paragraph (h)(3) of this section. ES2iACTUAL=Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section. ES2iBASE=Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section. ETR1iACTUAL=Emissions from each Group 1 transfer rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section. (0.02) ETR1iu=Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions. ETR1iu is calculated according to paragraph (h)(4) of this section. ETR2iACTUAL=Emissions from each Group 2 transfer rack i that are controlled, calculated according to paragraph (h)(4) of this section. ETR2iBASE=Emissions from each Group 2 transfer rack i at the baseline date, as calculated in paragraph (h)(4) of this section. EWW1iACTUAL = Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(5) of this section. EWW1ic = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(5) of this section. EWW2iACTUAL = Emissions from each Group 2 wastewater stream i that is controlled, calculated according to paragraph (h)(5) of this section. EWW2iBASE = Emissions from each Group 2 wastewater stream i at the baseline date, calculated according to paragraph (h)(5) of this section. n = Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater. m = Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

(i) For an emission point controlled using a reference control technology, the percent reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be as determined as described in paragraph (j) of this section.

(2) Emissions from process vents shall be determined as follows:

(i) Uncontrolled emissions from Group 1 process vents, EPV1iu, shall be calculated according to the procedures and equation for EPViu in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from Group 1 process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, EPV1iACTUAL, shall be calculated according to the following equation:

$$EPV1_{iACTUAL} = EPV1_{iu}\left(1 - \frac{\text{Nominal efficiency \%}}{100\%}\right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents, EPV2iACTUAL:

(A) For a Group 2 process vent controlled by a control device, a recovery device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percent reduction less than or equal to 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

(1) EPV2iu shall be calculated according to the equations and procedures for EPViu in paragraphs (g)(2)(i) and (g)(2)(ii) of this section, except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section, except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(3) If a recovery device was added as part of a pollution prevention project, EPV2iu shall be calculated prior to that recovery device. The equation for EPViu in paragraph (g)(2)(ii) of this section shall be used to calculate EPV2iu; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(4) If a recovery device was added as part of a pollution prevention project, the percent reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 process vent controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu}\left(1 - \frac{\text{Nominal efficiency \%}}{100\%}\right)$$

(iv) Emissions from Group 2 process vents at baseline, EPV2iBASE, shall be calculated as follows:

(A) If the process vent was uncontrolled on November 15, 1990, EPV2iBASE=EPV2iu and shall be calculated according to the procedures and equation for EPViu in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the process vent was controlled on November 15, 1990,

$$EPV2_{iBASE} = EPV2_{iu}\left(1 - \frac{\text{Percent reduction \%}}{100\%}\right)$$

where EPV2iu is calculated according to the procedures and equation for EPViu in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percent reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990, EPV2iBASE=EPV2iu, where EPV2iu is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from storage vessels shall be determined as follows:

(i) Uncontrolled emissions from Group 1 storage vessels, ES1iu, shall be calculated according to the equations and procedures for ESiu in paragraph (g)(3)(i) of this section.

(ii) Actual emissions from Group 1 storage vessels controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent emission reduction, ES1iACTUAL, shall be calculated according to the following equation:

$$ES1_{iACTUAL} = ES1_{iu}\left(1 - \frac{\text{Nominal efficiency \%}}{100\%}\right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 storage vessels, ES2iACTUAL:

(A) For a Group 2 storage vessel controlled using a control device or a pollution prevention measure (other than an internal or external floating roof) achieving a percent reduction less than or equal to 95-percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \times \left(1 - \frac{\textit{Percent}\ \text{reduction}}{100\%}\right)$$

(1) ES2iu is calculated according to the equations and procedures for ESiu in paragraph (g)(3)(i) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(3) If an internal or external floating roof meeting the specifications of §§63.119 (b), (c), or (d) of this subpart is used to control the vessel, the percent reduction shall be 95 percent.

(B) If a Group 2 storage vessel is controlled with an internal or external floating roof not meeting the specifications of §§63.119 (b), (c), or (d) of this subpart, ES2iACTUAL shall be calculated as specified for ESiACTUAL in paragraph (g)(3)(iii) or (g)(3)(iv) of this section.

(C) For a Group 2 storage vessel controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent reduction,

$$ES2_{iACTUAL} = ES2_{iu}\left(1 - \frac{\text{Nominal efficiency \%}}{100\%}\right)$$

(iv) Emissions from Group 2 storage vessels at baseline, ES2iBASE, shall be calculated as follows:

(A) If the fixed-roof vessel was uncontrolled on November 15, 1990, ES2iBASE=ES2iu and shall be calculated according to the procedures and equations for ESiu in paragraph (g)(3)(i) of this section.

(B) If the storage vessel was controlled on November 15, 1990:

(1) The equations for ESiACTUAL in paragraph (g)(3)(iii) of this section shall be used to calculate ES2iBASE for vessels controlled with an internal floating roof that does not meet the specifications of §§63.119 (b) or (d) of this subpart.

(2) The equations for ESiACTUAL in paragraph (g)(3)(iv) of this section shall be used to calculate ES2iBASE for vessels controlled with an external floating roof that does not meet the specifications of §§63.119(c) of this subpart.

(3) The following equations shall be used to calculate ES2iBASE for vessels controlled with a control device,

$$ES2_{iBASE} = ES2_{iu}\left(1 - \frac{\text{Percent reduction \%}}{100\%}\right)$$

where ES2iu shall be calculated according to the equations for ESiu in paragraph (g)(3)(i) of this section. The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(4) Emissions from transfer racks shall be determined as follows:

(i) Uncontrolled emissions from Group 1 transfer racks, ETR1iu, shall be calculated according to the procedures and equations for ETRiu as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(ii) Actual emissions from Group 1 transfer racks controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, ETRiACTUAL, shall be calculated according to the following equation:

$$ETR1_{iACTUAL} = ETR1_{iu}\left(1 - \frac{\text{Nominal efficiency}}{100\%}\right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 transfer racks, ETR2iACTUAL:

(A) For a Group 2 transfer rack controlled by a control device or a pollution prevention measure achieving a percent reduction less than or equal to 98 percent reduction,

$$ETR2_{iACTUAL} = ETR2_{iu}\left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

(1) ETR2iu shall be calculated according to the equations and procedures for ETRiu in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraph (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

(B) For a Group 2 transfer rack controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$ETR2_{iACTUAL} = ETR2_{iu}\left(1 - \frac{\text{Nominal efficiency}}{100\%}\right)$$

(iv) Emissions from Group 2 transfer racks at baseline, ETR2iBASE, shall be calculated as follows:

(A) If the transfer rack was uncontrolled on November 15, 1990, ETR2iBASE=ETR2iu and shall be calculated according to the procedures and equations for ETRiu in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the transfer rack was controlled on November 15, 1990,

$$ETR2_{iBASE} = ETR2_{iu}\left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

where ETR2iu is calculated according to the procedures and equations for ETRiu in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percent reduction shall be calculated according to the procedures in paragraphs (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

(5) Emissions from wastewater shall be determined as follows:

(i) EWW1ic shall be calculated according to the equation for EWWic in paragraph (g)(5)(i) of this section.

(ii) EWW2iBASE shall be calculated according to the equation for EWWiACTUAL in paragraph (g)(5)(ii) of this section for each Group 2 wastewater stream i, which on November 15, 1990, was not managed according to the requirements of §§§§63.133 through 63.137 of this subpart, as applicable.

(iii) EWW2iBASE shall be calculated according to the equation for EWWiACTUAL in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i, which on November 15, 1990, was managed according to the requirements of §§§§63.133 through 63.137 of this subpart, as applicable, and was uncontrolled or controlled to a level less stringent than the reference control technology.

(iv) For Group 2 wastewater streams that are managed according to the requirements of §§§§63.133 through 63.137 of this subpart, as applicable, EWW2iACTUAL shall be calculated as follows:

(A) EWW2iACTUAL shall be calculated according to the equation for EWWiACTUAL in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i that is controlled to a level less stringent than, or equivalent to, the reference control technology.

(B) EWW2iACTUAL shall be calculated according to the procedures for calculating EWW1iACTUAL in paragraph (h)(5)(v) of this section for each Group 2 wastewater stream that is controlled to a level more stringent than the reference control technology.

(v) The following equations for EWW1iACTUAL shall be used to calculate emissions from each Group 1 wastewater stream i that is managed according to the requirements of §§§§63.133 through 63.137 of this subpart, as applicable, and is controlled to a level more stringent than the reference control technology.

(A) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the concentration of table 9 HAP for stream i greater than that of the design steam stripper specified in §§63.138(d) of this subpart, and the control device used to reduce table 9 HAP emissions from the vapor stream(s) vented from the treatment process(es) achieves a percent reduction equal to 95 percent, the following equation shall be used. All terms in this equation are as defined and determined in paragraph (g)(5) of this section.

$$EWW1_{iACTUAL} = \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{5} \left[Fe_m HAP_{im} \left(1 - PR_{im}\right) \right] + 0.05 \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{5} \left[HAP_{im} PR_{im} \right]$$

(B) If the Group 1 wastewater stream i is not controlled using a treatment process or series of treatment processes with a nominal reduction efficiency in the table 9 HAP concentration greater than that of the design steam stripper specified in §§63.138(d) of this subpart, but the vapor stream(s) vented from the treatment process(es) are controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used. All terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

$$EWW1_{iACTUAL} = \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{5} \left[Fe_m HAP_{im} \left(1 - Fr_m\right) \right] + \left(1 - \frac{Nominal\ efficiency\ \%}{100}\right) \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{5} \left[HAP_{im} Fr_m \right]$$

(C) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the table 9 HAP concentration greater than that of the design steam stripper specified in §§63.138(d) of this subpart, and the vapor stream(s) vented from the treatment process are controlled using

a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used. All terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

$$EWW1_{iACTUAL} = \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[Fe_m HAP_{im} \left(1 - PR_{im}\right) \right] + \left(1 - \frac{Nominal\ efficiency\,\%}{100}\right) \left(6.0*10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[HAP_{im} PR_{im} \right]$$

(i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percent reductions than the percent efficiencies assigned to the reference control technologies in §§63.111 of this subpart.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant-site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Director of the EPA Office of Air Quality Planning and Standards in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance.

(ii) Description of the control technology including design specifications.

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented.

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a Federal Register notice establishing a nominal efficiency for the control technology.

(4) The Administrator may condition permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) can be submitted to the permitting authority for the source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority as part of an operating permit application or modification. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a Federal Register notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the application, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a Federal Register notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percent reduction) of pollution prevention measures:

(1) A pollution prevention measure is any practice which meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions, while the same product is produced.

(ii) Pollution prevention measures may include: substitution of feedstocks that reduce HAP emissions; alterations to the production process to reduce the volume of materials released to the environment; equipment modifications; housekeeping measures; and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990, can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section. When the term ""organic HAP"" is used in §§63.150(j)(2) in reference to wastewater emission points, the term ""table 9 HAP"" shall apply for the purposes of this paragraph.

(i) For pollution prevention measures, the percent reduction used in the equations in paragraphs (g)(2) through (g)(5) of this section and paragraphs (h)(2) through (h)(5) of this section is the percent difference between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) The following equation shall be used to calculate the percent reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B - \frac{\left(E_{pp} \times P_B\right)}{P_{pp}}}{E_B} \times 100\%$$

where:

Percent reduction=Efficiency of pollution prevention measure (percent organic HAP reduction). EB=Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section. Epp=Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section. PB=Monthly production before the pollution prevention measure, megagrams per month, during the same period over which EB is calculated. Ppp=Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure, EB, shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), and (g)(4) of this section for process vents, storage vessels, and transfer operations.

(B) For wastewater, EB shall be calculated as follows:

$$E_B = \sum_{i=1}^{n}\left[\left(6.0*10^{-8}\right)Q_{Bi}H_{Bi}\sum_{m=1}^{s}Fe_m HAP_{Bim}\right]$$

Where:

n = Number of wastewater streams. QBi = Average flow rate for wastewater stream i before the pollution prevention measure, defined and determined according to paragraph (g)(5)(i) of this section, liters per minute, before implementation of the pollution prevention measure. HBi = Number of hours per month that wastewater stream i was discharged before the pollution prevention measure, hours per month. s = Total number of table 9 HAP in wastewater stream i. Fem = Fraction emitted of table 9 HAP m in wastewater of this subpart, dimensionless. HAPBim = Average concentration of table 9 HAP m in wastewater stream i, defined and determined according to paragraph (g)(5)(i) of this section, before the pollution prevention measure, parts per million by weight, as measured before the implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to April 22, 1994, records may be used to determine EB.

(D) The monthly emissions after the pollution prevention measure, Epp, may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater, Epp shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^{n}\left[\left(6.0*10^{-8}\right)Q_{ppi}H_{ppi}\sum_{m=1}^{s}Fe_m HAP_{ppim}\right]$$

where n, Qppi, Hppi, s, Fem, and HAPppim are defined and determined as described in paragraph (j)(2)(ii)(B) of this section except that Qppi, Hppi, and HAPppim shall be determined after the pollution prevention measure has been implemented.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percent reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percent reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(5) of this section, used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percent reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator must demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the operating permit authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§§§63.113 through 63.148.

(1) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the operating permit authority.

(i) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their operating permit application or in their Implementation Plan if an operating permit application has not yet been submitted.

(3) An emissions averaging plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§§§63.113 through 63.148 of this subpart.

(4) A hazard or risk equivalency demonstration must:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the Administrator for such demonstrations.

(l) For periods of excursions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of excursions in the Periodic Reports as required in §§63.152 of this subpart.

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures of demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the excursion and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

(m) For each Group 1 or Group 2 emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§§§63.113 through 63.148 of this subpart. The specific requirements for process vents, storage vessels, transfer racks, and wastewater are identified in paragraphs (m)(1) through (m)(6) of this section.

(1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each process vent equipped with a flare, incinerator, boiler, or process heater.

(i) Determine, consistent with paragraph (g)(2)(i) of this section, whether the process vent is Group 1 or Group 2 according to the procedures in §§63.115.

(ii) Conduct initial performance tests to determine percent reduction as specified in §§63.116 of this subpart;

(iii) Monitor the operating parameters, keep records, and submit reports specified in §§63.114, §§63.117(a), and §§63.118 (a), (f), and (g) of this subpart, as appropriate for the specific control device.

(2) The source shall implement the following procedures for each process vent equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:

(i) Determine, consistent with paragraph (g)(2)(i) of this section, the flow rate, organic HAP concentration, and TRE index value using the methods specified in §§63.115;

(ii) Monitor the operating parameters, keep records, and submit reports specified in §§63.114, §§63.117(a), and §§63.118(b), (f), and (g) of this subpart, as appropriate for the specific recovery device.

(3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures in §§63.120 of this subpart,

(ii) Perform the reporting and recordkeeping procedures in §§§§63.122 and 63.123 of this subpart, and

(iii) For closed vent systems with control devices, conduct an initial design evaluation and submit an operating plan as specified in §§63.120(d) and §§63.122(a)(2) and (b) of this subpart.

(4) The source shall implement the following procedures for each transfer rack controlled with a vapor balancing system, or a vapor collection system and an incinerator, flare, boiler, process heater, adsorber, condenser, or absorber, as appropriate to the control technique:

(i) The monitoring and inspection procedures in §§63.127 of this subpart,

(ii) The testing and compliance procedures in §§63.128 of this subpart, and

(iii) The reporting and recordkeeping procedures in §§63.129 and §§63.130 of this subpart.

(5) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests as specified in §§63.138(j) of this subpart.

(ii) Conduct inspections and monitoring as specified in §§63.143 of this subpart.

(iii) A recordkeeping program as specified in §§63.147 of this subpart.

(iv) A reporting program as specified in §§63.146 of this subpart.

(6) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in §§63.114, §§63.120, §§63.127, or §§63.143 of this subpart, the owner or operator shall submit the information specified in §§63.151(f) of this subpart in the Implementation Plan or operating permit application.

(n) Records of all information required to calculate emission debits and credits shall be retained for five years.

(o) Initial Notifications, Implementation Plans, Notifications of Compliance Status, Periodic Reports, and other reports shall be submitted as required by §§63.151 and §§63.152 of this subpart.

1.jj Section 63.151 Initial notification.

[This section is not applicable to the permittee.]

1.kk Section 63.152 General reporting and continuous records.

(a) The owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section and keep continuous records of monitored parameters as specified in paragraph (f) of this section. Owners or operators requesting an extension of compliance shall also submit the report described in section 63.151(a)(6) of this subpart.

(1) [This section is not applicable to the permittee.]

(2) An Implementation Plan described in section 63.151(c), (d), and (e) of this subpart for existing sources with emission points that are included in an emissions average or for new sources.

(3) [This section is not applicable to the permittee.]

(4) Periodic Reports described in paragraph (c) of this section.

(5) Other reports described in paragraphs (d) and (e) of this section.

(b) [This section is not applicable to the permittee.]

(c) The owner or operator of a source subject to this subpart shall submit Periodic Reports.

(1) Except as specified under paragraphs (c)(5) and (c)(6) of this section, a report containing the information in paragraphs (c)(2), (c)(3), and (c)(4) of this section shall be submitted semiannually no later than 60 calendar days after the end of each 6-month period. The first report shall be submitted no later than 8 months after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due.
[Note: the Notification of Compliance Status report was due on September 15, 1997. Therefore, the six month reporting periods will end on March 15 and September 15 of each year, and reports shall be due within 60 days (not later than May 14 and November 14, respectively).]

(2) Except as provided in paragraph (c)(2)(iv) of this section, for an owner or operator of a source complying with the provisions of sections 63.113 through 63.147 for any emission points, Periodic Reports shall include all information specified in sections 63.117 and 63.118 for process vents, section 63.122 for storage vessels, sections 63.129 and 63.130 for transfer operations, and section 63.146 for process wastewater, including reports of periods when monitored parameters are outside their established ranges.

(i) For each parameter or parameters required to be monitored for a control device, the owner or operator shall establish a range of parameter values to ensure that the device is being applied, operated and maintained properly. As specified in paragraph (b)(2) of this section, these parameter values and the definition of an operating day shall be approved as part of and incorporated into the source's Notification of Compliance Status or operating permit, as appropriate.

(ii) The parameter monitoring data for Group 1 emission points and emission points included in emissions averages that are required to perform continuous monitoring shall be used to determine compliance with the required operating conditions for the monitored control devices or recovery devices. For each excursion, except for excused excursions, the owner or operator shall be deemed to have failed to have applied the control in a manner that achieves the required operating conditions.

(A) An excursion means any of the three cases listed in paragraph (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section. For a control device or recovery device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section, this is considered a single excursion for the control device or recovery device.

(1) When the daily average value of one or more monitored parameters is outside the permitted range.

(2) When the period of control device or recovery device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.

(3) When the period of control device or recovery device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(4) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (c)(2)(ii)(A)(2) and (c)(2)(ii)(A)(3) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under section 63.151(g)(4), monitoring data are insufficient to calculate a valid hour of data if there are less than 4 data values recorded during the hour.

(B) The number of excused excursions for each control device or recovery device for each semiannual period is specified in paragraphs (c)(2)(ii)(B)(1) through (c)(2)(ii)(B)(6) of this section. This paragraph applies to sources required to submit Periodic Reports semiannually or quarterly. The first semiannual period is the 6-month period starting the date the Notification of Compliance Status is due.

(1) For the first semiannual period -- six excused excursions.

(2) For the second semiannual period -- five excused excursions.

(3) For the third semiannual period -- four excused excursions.

(4) For the fourth semiannual period -- three excused excursions.

(5) For the fifth semiannual period -- two excused excursions.

(6) For the sixth and all subsequent semiannual periods -- one excused excursion.

(C) A monitored parameter that is outside its established range or monitoring data that are not collected are excursions. However, if the conditions in paragraph (c)(2)(ii)(C)(1) or (c)(2)(ii)(C)(2) of this section are met, these excursions are not violations and do not count toward the number of excused excursions for determining compliance.

(1) Periods of start-up, shutdown, or malfunction. During periods of start-up, shutdown, or malfunction when the source is operated during such periods in accordance with the source's start-up, shutdown, and malfunction plan as required by section 63.6(e)(3) of Subpart A.

(2) Periods of nonoperation. During periods of nonoperation of the chemical manufacturing process unit, or portion thereof, that results in cessation of the emissions to which the monitoring applies.

(D) Nothing in paragraph (c)(2)(ii) of this section shall be construed to allow or excuse a monitoring parameter excursion caused by any activity that violates other applicable provisions of Subpart A, F, or G of this part.

(E) Paragraph (c)(2)(ii) of this section, except paragraph (c)(2)(ii)(C) of this section, shall apply only to emission points and control devices or recovery devices for which continuous monitoring is required by sections 63.113 through 63.150.

(iii) Periodic Reports shall include the daily average values of monitored parameters for both excused and unexcused excursions, as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.

(iv) The provisions of paragraphs (c)(2), (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section do not apply to any storage vessel for which the owner or operator is not required, by the applicable monitoring plan established under section 63.120(d)(2), to keep continuous records. If continuous records are required, the owner or operator shall specify, in the monitoring plan, whether the provisions of paragraphs (c)(2), (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section apply.

(3) If any performance tests are reported in a Periodic Report, the following information shall be included:

(i) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (b)(1)(ii) of this section.

(ii) For additional tests performed for the same kind of emission point using the same method, results and any other information required in section 63.117 for process vents, section 63.129 for transfer, and section 63.146 for process wastewater shall be submitted, but a complete test report is not required.

(4) Periodic Reports shall include the information in paragraphs (c)(4)(i) through (c)(4)(iv) of this section, as applicable:

(i) For process vents, reports of process changes as required under section 63.118 (g), (h), (i), and (j) of this subpart,

(ii) Any supplements required under section 63.151(i) and (j) of this subpart,

(iii) Notification if any Group 2 emission point becomes a Group 1 emission point, including a compliance schedule as required in section 63.100 of Subpart F of this part, and

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

(5) The owner or operator of a source shall submit quarterly reports for all emission points included in an emissions average.

(i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status no later than 5 months after the compliance date specified in section 63.100 of Subpart F.

(ii) The quarterly reports shall include the information specified in this paragraph for all emission points included in an emissions average.

(A) The credits and debits calculated each month during the quarter;

(B) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under section 63.150(e)(4) of this subpart.

(C) The values of any inputs to the credit and debit equations in section 63.150 (g) and (h) of this subpart that change from month to month during the quarter or that have changed since the previous quarter;

(D) Results of any performance tests conducted during the reporting period including one complete report for each test method used for a particular kind of emission point as described in paragraph (c)(3) of this section;

(E) Reports of daily average values of monitored parameters for both excused and unexcused excursions as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.

(iii) Paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 and Group 2 points included in emissions averages. For storage vessels to which the provisions of paragraphs (c)(2)(i) through (c)(2)(iii) of this section do not apply (as specified in paragraph (c)(2)(iv) of this section), the owner or operator is required to comply with the provisions of the applicable monitoring plan, and monitoring records may be used to determine compliance.

(iv) Every fourth quarterly report shall include the following:

(A) A demonstration that annual credits are greater than or equal to annual debits as required by section 63.150(e)(3) of this subpart; and

(B) A certification of compliance with all the emissions averaging provisions in section 63.150 of this subpart.

(6) The owner or operator of a source shall submit reports quarterly for particular emission points not included in an emissions average under the circumstances described in paragraphs (c)(6)(i) through (c)(6)(v) of this section.

(i) The owner or operator of a source subject to this subpart shall submit quarterly reports for a period of one year for an emission point that is not included in an emissions average if:

(A) The emission point has more excursions, as defined in paragraph (c)(2)(ii) of this section, than the number of excused excursions allowed under paragraph (c)(2)(ii)(B) of this section for a semiannual reporting period; and

(B) The Administrator requests the owner or operator to submit quarterly reports for the emission point.

(ii) The quarterly reports shall include all information in paragraphs (c)(2), (c)(3), and (c)(4) of this section applicable to the emission point(s) for which quarterly reporting is required under paragraph (c)(6)(i) of this section. Information applicable to other emission points within the source shall be submitted in the semiannual reports required under paragraph (c)(1) of this section.

(iii) Quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter.

(iv) After quarterly reports have been submitted for an emission point for one year, the owner or operator may return to semiannual reporting for the emission point unless the Administrator requests the owner or operator to continue to submit quarterly reports.

(v) Paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 emission points. For storage vessels to which the provisions of paragraphs (c)(2)(i) through (c)(2)(iii) of this section do not apply (as specified in paragraph (c)(2)(iv) of this section), the owner or operator is required to comply with the provisions of the applicable monitoring plan, and monitoring records may be used to determine compliance.

(d) Other reports shall be submitted as specified in Subpart A of this part or in sections 63.113 through 63.151 of this subpart. These reports are:

(1) Reports of start-up, shutdown, and malfunction required by section 63.10(d)(5) of Subpart A. The start-up, shutdown and malfunction reports may be submitted on the same schedule as the Periodic Reports required under paragraph (c) of this section instead of the schedule specified in section 63.10(d)(5) of Subpart A.

(2) For storage vessels, the notifications of inspections required by section 63.122 (h)(1) and (h)(2) of this subpart.

(3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in section 63.150(i) of this subpart.

(4) [This section is not applicable to the permittee.]

(e) [This section is not applicable to the permittee.]

(f) Owners or operators required to keep continuous records by sections 63.118, 63.130, 63.147, 63.150, or other sections of this subpart shall keep records as specified in paragraphs (f)(1) through (f)(7) of this section, unless an alternative record keeping system has been requested and approved under section 63.151(f) or (g) or section 63.152(e) or under section 63.8(f) of Subpart A of this part, and except as provided in paragraph (c)(2)(ii)(C) of this section or in paragraph (g) of this section. If a monitoring plan for storage vessels pursuant to section 63.120(d)(2)(i) requires continuous records, the monitoring plan shall specify which provisions, if any, of paragraphs (f)(1) through (f)(7) of this section apply.

(1) The monitoring system shall measure data values at least once every 15 minutes.

(2) The owner or operator shall record either:

(i) Each measured data value; or

(ii) Block average values for 15-minute or shorter periods calculated from all measured data values during each period or at least one measured data value per minute if measured more frequently than once per minute.

(3) If the daily average value of a monitored parameter for a given operating day is within the range established in the Notification of Compliance Status or operating permit, the owner or operator shall either:

(i) Retain block hourly average values for that operating day for 5 years and discard, at or after the end of that operating day, the 15-minute or more frequent average values and readings recorded under paragraph (f)(2) of this section; or

(ii) Retain the data recorded in paragraph (f)(2) of this section for 5 years.

(4) If the daily average value of a monitored parameter for a given operating day is outside the range established in the Notification of Compliance Status or operating permit, the owner or operator shall retain the data recorded that operating day under paragraph (f)(2) of this section for 5 years.

(5) Daily average values of each continuously monitored parameter shall be calculated for each operating day, and retained for 5 years, except as specified in paragraphs (f)(6) and (f)(7) of this section.

(i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.

(6) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that operating day. For these operating days, the records required in paragraph (f)(3) of this section shall also be retained for 5 years.

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

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

(ii) Start-ups;

(iii) Shutdowns;

(iv) Malfunctions;

(v) Periods of non-operation of the chemical manufacturing process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

(g) For any parameter with respect to any item of equipment, the owner or operator may implement the record keeping requirements in paragraph (g)(1) or (g)(2) of this section as alternatives to the continuous operating parameter monitoring and record keeping provisions listed in sections 63.114, 63.117, and 63.118 for process vents, sections 63.127, 63.129, and 63.130 for transfer operations, sections 63.143, 63.146, and 63.147 for wastewater, and/or section 63.152(f), except that section 63.152(f)(7) shall apply. The owner or operator shall retain each record required by paragraph (g)(1) or (g)(2) of this section as provided in section 63.103(c) of Subpart F of this part, except as provided otherwise in paragraph (g)(1) or (g)(2) of this section.

[These requirements are as specified in 40 CFR 63.152(g)(1) through (g)(2).]

1.ll Section 63.153 Implementation and enforcement.

[This section is not applicable to the permittee.]

1.mm Appendix to Subpart G -- Tables and Figures

[Table 1 through Table 37, and Figure 1 are as specified in the federal rule.]

2. 40 CFR Part 63, Subpart H

2.a Section 63.160 Applicability and designation of source.

(a) The provisions of this subpart apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems required by this subpart that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR Part 63 that references this subpart.

(b) After the compliance date for a process unit, equipment to which this subpart applies that are also subject to the provisions of:

(1) 40 CFR Part 60 will be required to comply only with the provisions of this subpart.

(2) 40 CFR Part 61 will be required to comply only with the provisions of this subpart.

(c) If a process unit subject to the provisions of this subpart has equipment to which this subpart does not apply, but which is subject to a standard identified in paragraph (c)(1), (c)(2), or (c)(3) of this section, the owner or operator may elect to apply this subpart to all such equipment in the process unit. If the owner or operator elects this method of compliance, all VOC in such equipment shall be considered, for purposes of applicability and compliance with this subpart, as if it were organic hazardous air pollutant (HAP). Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with the standard identified in paragraph (c)(1), (c)(2), or (c)(3) of this section.

(1) 40 CFR Part 60, Subpart VV, GGG, or KKK; (2) 40 CFR Part 61, Subpart F or J; or (3) 40 CFR Part 264, Subpart BB or 40 CFR Part 265, Subpart BB.

(2) [Reserved]

(d) The provisions in section 63.1(a)(3) of Subpart A of this part do not alter the provisions in paragraph (b) of this section.

(e) Except as provided in any subpart that references this subpart, lines and equipment not containing process fluids are not subject to the provisions of this subpart. Utilities, and other non-process lines, such as heating and cooling systems which do not combine their materials with those in the processes they serve, are not considered to be part of a process unit.

(f) The provisions of this subpart do not apply to research and development facilities or to bench-scale batch processes, regardless of whether the facilities or processes are located at the same plant site as a process subject to the provisions of this subpart.

2.b Section 63.161 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in this section as follows, except as provided in any subpart that references this subpart.

Batch process means a process in which the equipment is fed intermittently or discontinuously. Processing then occurs in this equipment after which the equipment is generally emptied. Examples of industries that use batch processes include pharmaceutical production and pesticide production.

Batch product-process equipment train means the collection of equipment (e.g., connectors, reactors, valves, pumps, etc.) configured to produce a specific product or intermediate by a batch process.

Bench-scale batch process means a batch process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Bottoms receiver means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

Closed-loop system means an enclosed system that returns process fluid to the process and is not vented to the atmosphere except through a closed-vent system.

Closed-purge system means a system or combination of system and portable containers, to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

Closed-vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back into a process.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic hazardous air pollutant emissions.

Compliance date means the dates specified in §§63.100(k) or §§63.100(l)(3) of subpart F of this part for process units subject to subpart F of this part; the dates specified in §§63.190(e) of subpart I of this part for process units subject to subpart I of this part. For sources subject to other subparts in 40 CFR part 63 that reference this subpart, compliance date will be defined in those subparts. However, the compliance date for §§63.170 shall be no later than 3 years after the effective date of those subparts unless otherwise specified in such other subparts.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are not inaccessible, glass, or glass-lined as described in §§63.174(h) of this subpart.

Control device means any equipment used for recovering, recapturing, or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, flares, boilers, and process heaters.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant service; and any control devices or systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in §§63.180(b) and (c), as appropriate, to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards, such as ANSI B31—3.

In food/medical service means that a piece of equipment in organic hazardous air pollutant service contacts a process stream used to manufacture a Food and Drug Administration regulated product where leakage of a barrier fluid into the process stream would cause any of the following:

(1) A dilution of product quality so that the product would not meet written specifications,

(2) An exothermic reaction which is a safety hazard,

(3) The intended reaction to be slowed down or stopped, or

(4) An undesired side reaction to occur.

In gas/vapor service means that a piece of equipment in organic hazardous air pollutant service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service or in light liquid service.

In light liquid service means that a piece of equipment in organic hazardous air pollutant service contains a liquid that meets the following conditions:

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

(2) The total concentration of the pure organic 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:

Vapor pressures may be determined by the methods described in 40 CFR 60.485(e)(1).

In liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service.

In organic hazardous air pollutant or in organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of §§63.180(d) of this subpart. The provisions of §§63.180(d) of this subpart also specify how to determine that a piece of equipment is not in organic HAP service.

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

In volatile organic compound or in VOC service means, for the purposes of this subpart, that:

(1) The piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (see 40 CFR 60.2 for the definition of VOC, and 40 CFR 60.485(d) to determine whether a piece of equipment is not in VOC service); and

(2) The piece of equipment is not in heavy liquid service as defined in 40 CFR 60.481.

In-situ sampling systems means nonextractive samplers or in-line samplers.

Initial start-up means the first time a new or reconstructed source begins production. Initial start-up does not include operation solely for testing equipment. Initial start-up does not include subsequent start-ups (as defined in this section) of process units following malfunctions or process unit shutdowns.

Instrumentation system means a group of equipment components used to condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 0.5 inches and smaller, and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 0.5 inches and connectors greater than nominally 0.75 inches associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

Liquids dripping means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquid dripping include puddling or new stains that are indicative of an existing evaporated drip.

Nonrepairable means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process unit shutdown.

On-site or On site means, with respect to records required to be maintained by this subpart, that the records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the chemical manufacturing process unit to which the records pertain, or storage in central files elsewhere at the major source.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Polymerizing monomer means a molecule or compound usually containing carbon and of relatively low molecular weight and simple structure (e.g., hydrogen cyanide, acrylonitrile, styrene), which is capable of conversion to polymers, synthetic resins, or elastomers by combination with itself due to heat generation caused by a pump mechanical seal surface, contamination by a seal fluid (e.g., organic peroxides or chemicals that will form organic peroxides), or a combination of both with the resultant polymer buildup causing rapid mechanical seal failure.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.

Pressure relief device or valve means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices.

Process unit means a chemical manufacturing process unit as defined in subpart F of this part, a process subject to the provisions of subpart I of this part, or a process subject to another subpart in 40 CFR part 63 that references this subpart.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown, is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. Recapture devices include, but are not limited to, absorbers, carbon absorbers, and condensers.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use or reuse. Recovery devices include, but are not limited to, absorbers, carbon absorbers, and condensers. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

Repaired means that equipment:

(1) Is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this subpart, and

(2) Unless otherwise specified in applicable provisions of this subpart, is monitored as specified in §§63.180 (b) and (c), as appropriate, to verify that emissions from the equipment are below the applicable leak definition.

Routed to a process or route to a process means the emissions are conveyed by hard-piping or a closed vent system to any enclosed portion of a process unit where the emissions are predominately recycled and/or consumed in the same manner as a material that fulfills the same function in the process; and/or transformed by chemical reaction into materials that are not organic hazardous air pollutants; and/or incorporated into a product; and/or recovered.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

Screwed connector means a threaded pipe fitting where the threads are cut on the pipe wall and the fitting requires only two pieces to make the connection (i.e., the pipe and the fitting).

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Set pressure means the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

Start-up means the setting in operation of a piece of equipment or a control device that is subject to this subpart.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a process unit (as defined in the specific subpart that references this subpart) when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

2.c Section 63.162 Standards: General.

(a) Compliance with this subpart will be determined by review of the records required by section 63.181 of this subpart and the reports required by section 63.182 of this subpart, review of performance test results, and by inspections.

(b) (1) An owner or operator may request a determination of alternative means of emission limitation to the requirements of sections 63.163 through 63.170, and sections 63.172 through 63.174 of this subpart as provided in section 63.177.

(2) If the Administrator makes a determination that a means of emission limitation is a permissible alternative to the requirements of sections 63.163 through 63.170, and sections 63.172 through 63.174 of this subpart, the owner or operator shall comply with the alternative.

(c) Each piece of equipment in a process unit to which this subpart applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.

(d) Equipment that is in vacuum service is excluded from the requirements of this subpart.

(e) Equipment that is in organic HAP service less than 300 hours per calendar year is excluded from the requirements of sections 63.163 through 63.174 of this subpart and section 63.178 of this subpart if it is identified as required in section 63.181(j) of this subpart.

(f) When each leak is detected as specified in sections 63.163 and 63.164; sections 63.168 and 63.169; and sections 63.172 through 63.174 of this subpart, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored as specified in sections 63.168(f)(3), and 63.175(e)(7)(i)(D) of this subpart, and no leak has been detected during the follow-up monitoring. If the owner or operator elects to comply using the provisions of section 63.174(c)(1)(i) of this subpart, the identification on a connector may be removed after it is monitored as specified in section 63.174(c)(1)(i) and no leak is detected during that monitoring.

(3) The identification which has been placed on equipment determined to have a leak, except for a valve or for a connector that is subject to the provisions of section 63.174(c)(1)(i), may be removed after it is repaired.

(g) Except as provided in paragraph (g)(1) of this section, all terms in this subpart that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), refer to the standard calendar periods unless specified otherwise in the section or subsection that imposes the requirement.

(1) If the initial compliance date does not coincide with the beginning of the standard calendar period, an owner or operator may elect to utilize a period beginning on the compliance date, or may elect to comply in accordance with the provisions of paragraphs (g)(2) or (g)(3) of this section.

(2) Time periods specified in this subpart for completion of required tasks may be changed by mutual agreement between the owner or operator and the Administrator, as specified in Subpart A of this part. For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.

(3) Except as provided in paragraph (g)(1) or (g)(2) of this section, where the period specified for compliance is a standard calendar period, if the initial compliance date does not coincide with the beginning of the calendar period, compliance shall be required according to the schedule specified in paragraphs (g)(3)(i) or (g)(3)(ii) of this section, as appropriate.

(i) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs, if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or

(ii) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.

(4) In all instances where a provision of this subpart requires completion of a task during each of multiple successive periods, an owner or operator may perform the required task at any time during each period, provided the task is conducted at a reasonable interval after completion of the task during the previous period.

(h) In all cases where the provisions of this subpart require an owner or operator to repair leaks by a specified time after the leak is detected, it is a violation of this subpart to fail to take action to repair the leaks within the specified time. If action is taken to repair the leaks within the specified time, failure of that action to successfully repair the leak is not a violation of this subpart. However, if the repairs are unsuccessful, a leak is detected and the owner or operator shall take further action as required by applicable provisions of this subpart.

2.d Section 63.163 Standards: Pumps in light liquid service.

(a) The provisions of this section apply to each pump that is in light liquid service.

(1) The provisions are to be implemented on the dates specified in the specific subpart in 40 CFR Part 63 that references this subpart in the phases specified below:

(i) For each group of existing process units at existing sources subject to the provisions of Subparts F or I of this part, the phases of the standard are:

(A) Phase I, beginning on the compliance date;

(B) Phase II, beginning no later than 1 year after the compliance date; and

(C) Phase III, beginning no later than 2 ½ years after the compliance date.

(ii) For new sources subject to the provisions of Subparts F or I of this part, the applicable phases of the standard are:

(A) After initial start-up, comply with the Phase II requirements; and

(B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.

(2) The owner or operator of a source subject to the provisions of Subparts F or I of this part may elect to meet the requirements of a later phase during the time period specified for an earlier phase.

(3) Sources subject to other subparts in 40 CFR Part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(b) (1) The owner or operator of a process unit subject to this subpart shall monitor each pump monthly to detect leaks by the method specified in section 63.180(b) of this subpart and shall comply with the requirements of paragraphs (a)

through (d) of this section, except as provided in section 63.162(b) of this subpart and paragraphs (e) through (j) of this section.

(2) The instrument reading, as determined by the method as specified in section 63.180(b) of this subpart, that defines a leak in each phase of the standard is:

(i) For Phase I, an instrument reading of 10,000 parts per million or greater.

(ii) For Phase II, an instrument reading of 5,000 parts per million or greater.

(iii) For Phase III, an instrument reading of:

(A) 5,000 parts per million or greater for pumps handling polymerizing monomers;

(B) 2,000 parts per million or greater for pumps in food/medical service; and

(C) 1,000 parts per million or greater for all other pumps.

(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in paragraph (c)(3) of this section or section 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:

(i) Tightening of packing gland nuts.

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(3) For pumps in Phase III to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.

(d) (1) The owner or operator shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.

(2) If, in Phase III, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the owner or operator shall implement a quality improvement program for pumps that complies with the requirements of section 63.176 of this subpart.

(3) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by the following equation:

$$\%PL=((PL-PS)/(PT-PS))\times 100$$

where:

%PL=Percent leaking pumps
PL=Number of pumps found leaking as determined through monthly monitoring as required in paragraphs (b)(1) and (b)(2) of this section.
PT=Total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section.
PS=Number of pumps leaking within 1 month of start-up during the current monitoring period.

(e) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) through (d) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) 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 that complies with the requirements of section 63.172 of this subpart; or

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

(2) The barrier fluid is not in light liquid service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(i) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in section 63.180(b) of this subpart to determine if there is a leak of organic HAP in the barrier fluid.

(ii) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (e)(3) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(6)(i) of this section, or if, based on the criteria established in paragraph (e)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 63.171 of this subpart.

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

(f) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of paragraphs (a) through (c) of this section.

(g) Any pump equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of section 63.172 of this subpart is exempt from the requirements of paragraphs (b) through (e) of this section.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(4) of this section, and the daily requirements of paragraph (e)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

(i) If more than 90 percent of the pumps at a process unit meet the criteria in either paragraph (e) or (f) of this section, the process unit is exempt from the requirements of paragraph (d) of this section.

(j) Any pump that is designated, as described in section 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor pump is exempt from the requirements of paragraphs (b) through (e) of this section if:

(1) The owner or operator of the pump determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

2.e Section 63.164 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to the atmosphere, except as provided in section 63.162(b) of this subpart and paragraphs (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of section 63.172 of this subpart; or

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

(c) The barrier fluid shall not be in light liquid service.

(d) Each barrier fluid system as described in paragraphs (a) through (c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 63.171 of this subpart.

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

(h) A compressor is exempt from the requirements of paragraphs (a) through (g) of this section if it is equipped with a closed-vent system to capture and transport leakage from the compressor drive shaft seal back to a process or a fuel gas system or to a control device that complies with the requirements of section 63.172 of this subpart.

(i) Any compressor that is designated, as described in section 63.181(b)(2)(ii) of this subpart, to operate with an instrument reading of less than 500 parts per million above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:

(1) Is demonstrated to be operating with an instrument reading of less than 500 parts per million above background, as measured by the method specified in section 63.180(c) of this subpart; and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

2.f Section 63.165 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in paragraph (b) of this section, as measured by the method specified in section 63.180(c) of this subpart.

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in section 63.171 of this subpart.

(2) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in section 63.180(c) of this subpart.

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in section 63.172 of this subpart is exempt from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in section 63.171 of this subpart.

2.g Section 63.166 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in section 63.162(b) of this subpart. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of section 63.172 of this subpart; or

(4) Collect, store, and transport the purged process fluid to a system or facility identified in paragraph (b)(4)(i), (ii), or (iii) of this section.

(i) A waste management unit as defined in section 63.111 of Subpart G of this part, if the waste management unit is subject to, and operated in compliance with the provisions of Subpart G of this part applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of Subpart G of Part 63, the waste management unit need not be subject to, and operated in compliance with the requirements of 40 CFR Part 63, Subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility.

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR Part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR Part 261.

(c) In-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

2.h Section 63.167 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in section 63.162(b) of this subpart and paragraphs (d) and (e) of this section.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or, would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraph (a) through (c) of this section.

2.i Section 63.168 Standards: Valves in gas/vapor service and in light liquid service.

(a) The provisions of this section apply to valves that are either in gas service or in light liquid service.

(1) The provisions are to be implemented on the dates set forth in the specific subpart in 40 CFR Part 63 that references this subpart as specified in paragraph (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section.

(i) For each group of existing process units at existing sources subject to the provisions of Subpart F or I of this part, the phases of the standard are:

(A) Phase I, beginning on the compliance date;

(B) Phase II, beginning no later than 1 year after the compliance date; and

(C) Phase III, beginning no later than 2 ½ years after the compliance date.

(ii) For new sources subject to the provisions of Subpart F or I of this part, the applicable phases of the standard are:

(A) After initial start-up, comply with the Phase II requirements; and

(B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.

(iii) Sources subject to other subparts in 40 CFR Part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(2) The owner or operator of a source subject to this subpart may elect to meet the requirements of a later phase during the time period specified for an earlier phase.

(3) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section 63.180(b)(6) of this subpart.

(b) The owner or operator of a source subject to this subpart shall monitor all valves, except as provided in section 63.162(b) of this subpart and paragraphs (h) and (i) of this section, at the intervals specified in paragraphs (c) and (d) of this section and shall comply with all other provisions of this section, except as provided in section 63.171, section 63.177, section 63.178, and section 63.179 of this subpart.

(1) The valves shall be monitored to detect leaks by the method specified in section 63.180(b) of this subpart.

(2) The instrument reading that defines a leak in each phase of the standard is:

(i) For Phase I, an instrument reading of 10,000 parts per million or greater.

(ii) For Phase II, an instrument reading of 500 parts per million or greater.

(iii) For Phase III, an instrument reading of 500 parts per million or greater.

(c) In Phases I and II, each valve shall be monitored quarterly.

(d) In Phase III, the owner or operator shall monitor valves for leaks at the intervals specified below:

(1) At process units with 2 percent or greater leaking valves, calculated according to paragraph (e) of this section, the owner or operator shall either:

(i) Monitor each valve once per month; or

(ii) Within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section 63.175 (d) or (e) of this subpart and monitor quarterly.

(2) At process units with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) and (d)(4) of this section.

(3) At process units with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 quarters.

(4) At process units with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every 4 quarters.

(e) (1) Percent leaking valves at a process unit shall be determined by the following equation:

$$\%VL=(VL/(VT+VC))\times 100$$

where:

%VL=Percent leaking valves as determined through periodic monitoring required in paragraphs (b) through (d) of this section.
VL=Number of valves found leaking excluding nonrepairables as provided in paragraph (e)(3)(i) of this section.
VT=Total valves monitored, in a monitoring period excluding valves monitored as required by (f)(3) of this section.
VC=Optional credit for removed valves=0.67 × net number (i.e., total removed−total added) of valves in organic HAP service removed from process unit after the date set forth in section 63.100(k) of Subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then VC=0.

(2) For use in determining monitoring frequency, as specified in paragraph (d) of this section, the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.

(3) (i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (e)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves.

(f) (1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in section 63.171 of this subpart.

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

(3) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair.

(i) The monitoring shall be conducted as specified in section 63.180 (b) and (c), as appropriate, to determine whether the valve has resumed leaking.

(ii) Periodic monitoring required by paragraphs (b) through (d) of this section may be used to satisfy the requirements of this paragraph (f)(3), if the timing of the monitoring period coincides with the time specified in this paragraph (f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of this paragraph (f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this paragraph (f)(3).

(iii) If a leak is detected by monitoring that is conducted pursuant to paragraph (f)(3) of this section, the owner or operator shall follow the provisions of paragraphs (f)(3)(iii)(A) and (f)(3)(iii)(B) of this section, to determine whether that valve must be counted as a leaking valve for purposes of section 63.168(e) of this subpart.

(A) If the owner or operator elected to use periodic monitoring required by paragraphs (b) through (d) of this section to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve.

(B) If the owner or operator elected to use other monitoring, prior to the periodic monitoring required by paragraphs (b) through (d) of this section, to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.

(g) First attempts at repair include, but are not limited to, the following practices where practicable:

(1) Tightening of bonnet bolts,

(2) Replacement of bonnet bolts,

(3) Tightening of packing gland nuts, and

(4) Injection of lubricant into lubricated packing.

(h) Any valve that is designated, as described in section 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) through (f) of this section if:

(1) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and

(2) The owner or operator of the valve has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

(i) Any valve that is designated, as described in section 63.181(b)(7)(ii) of this subpart, as a difficult-to-monitor valve is exempt from the requirements of paragraphs (b) through (d) of this section if:

(1) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the valve is located is an existing source or the owner or operator designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and
(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

(j) Any equipment located at a plant site with fewer than 250 valves in organic HAP service is exempt from the requirements for monthly monitoring and a quality improvement program specified in paragraph (d)(1) of this section. Instead, the owner or operator shall monitor each valve in organic HAP service for leaks once each quarter, or comply with paragraph (d)(3) or (d)(4) of this section except as provided in paragraphs (h) and (i) of this section.

2.j Section 63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service.

(a) Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in section 63.180(b) of this subpart if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in paragraphs (c) and (d) of this section, it is not necessary to monitor the system for leaks by the method specified in section 63.180(b) of this subpart.

(b) If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for all other pumps (including pumps in food/medical service), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 63.171 of this subpart.

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

(3) For equipment identified in paragraph (a) of this section that is not monitored by the method specified in section 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

(d) First attempts at repair include, but are not limited to, the practices described under sections 63.163(c)(2) and 63.168(g) of this subpart, for pumps and valves, respectively.

2.k Section 63.170 Standards: Surge control vessels and bottoms receivers.

Each surge control vessel or bottoms receiver that is not routed back to the process and that meets the conditions specified in table 2 or table 3 of this subpart shall be equipped with a closed-vent system that routes the organic vapors vented from the surge control vessel or bottoms receiver back to the process or to a control device that complies with the requirements in section 63.172 of this subpart, except as provided in section 63.162(b) of this subpart, or comply with the requirements of section 63.119(b) or (c) of Subpart G of this part.

2.l Section 63.171 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected is allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

(c) Delay of repair for valves, connectors, and agitators is also allowed if:

(1) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with section 63.172 of this subpart.

(d) Delay of repair for pumps is also allowed if:

(1) Repair requires replacing the existing seal design with a new system that the owner or operator has determined under the provisions of section 63.176(d) of this subpart will provide better performance or:

(i) A dual mechanical seal system that meets the requirements of section 63.163(e) of this subpart,

(ii) A pump that meets the requirements of section 63.163(f) of this subpart, or

(iii) A closed-vent system and control device that meets the requirements of section 63.163(g) of this subpart; and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

2.m Section 63.172 Standards: Closed-vent systems and control devices.

(a) Owners or operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in section 63.162(b) of this subpart.

(b) Recovery or recapture devices (e.g., condensers and absorbers) shall be designed and operated to recover the organic hazardous air pollutant emissions or volatile organic compounds emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts par million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to the provisions of section 63.179.

(c) Enclosed combustion devices shall be designed and operated to reduce the organic hazardous air pollutant emissions or volatile organic compounds emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent, or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of section 63.11(b) of Subpart A of this part.

(e) Owners or operators of control devices that are used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their design. [Note: The intent of this provision is to ensure proper operation and maintenance of the control device.]

(f) Except as provided in paragraphs (k) and (l) of this section, each closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the closed-vent system is constructed of hard-piping, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed-vent system is constructed of duct work, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and

(ii) Conduct annual inspections according to the procedures in paragraph (g) of this section.

(g) Each closed-vent system shall be inspected according to the procedures in section 63.180(b) of this subpart.

(h) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (i) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (i) of this section.

(i) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(j) For each closed-vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (j)(1) or (j)(2) of this section, except as provided in paragraph (j)(3) of this section.

(1) Install, set or adjust, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in section 63.118(a)(3) of Subpart G of this part. The flow indicator shall be installed at the entrance to any bypass line; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line.

(3) Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(k) Any parts of the closed-vent system that are designated, as described in paragraph 63.181(b)(7)(i), as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (f)(1) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times, but not more frequently than annually.

(l) Any parts of the closed-vent system that are designated, as described in section 63.181 (b)(7)(i) of this subpart, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(m) Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of this subpart, such system or control device shall be operating.

(n) After the compliance dates specified in section 63.100 of Subpart F of this part, the owner or operator of any control device subject to this subpart that is also subject to monitoring, record keeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and record keeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, record keeping, and reporting requirements of this subpart, or with the monitoring, record keeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, record keeping and reporting requirements of this subpart. The owner or operator shall identify which option has been chosen, in the next periodic report required by section 63.182(d).

2.n Section 63.173 Standards: Agitators in gas/vapor service and in light liquid service.

(a) (1) Each agitator shall be monitored monthly to detect leaks by the methods specified in section 63.180(b) of this subpart, except as provided in section 63.162(b) of this subpart.

(2) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(b) (1) Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.

(2) If there are indications of liquids dripping from the agitator, a leak is detected.

(c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 63.171 of this subpart.

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

(d) Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (d)(6) of this section are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the agitator stuffing box pressure; or

(ii) 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 that complies with the requirements of section 63.172 of this subpart; or

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

(2) The barrier fluid is not in light liquid organic HAP service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each agitator is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.

(i) If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the agitator shall be monitored as specified in section 63.180(b) of this subpart to determine the presence of organic HAP in the barrier fluid.

(ii) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (d)(3) of this section is observed daily or is equipped with an alarm unless the agitator is located within the boundary of an unmanned plant site.

(6) (i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the agitator seal exceed the criteria established in paragraph (d)(6)(i) of this section, or if, based on the criteria established in paragraph (d)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 63.171 of this subpart.

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

(e) Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from paragraphs (a) through (c) of this section.

(f) Any agitator equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or fuel gas system or to a control device that complies with the requirements of section 63.172 of this subpart is exempt from the requirements of paragraphs (a) through (c) of the section.

(g) Any agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(1) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each agitator is visually inspected as often as practical and at least monthly.

(h) Any agitator that is difficult-to-monitor is exempt from the requirements of paragraphs (a) through (d) of this section if:

(1) The owner or operator determines that the agitator cannot be monitored without elevating the monitoring personnel more than two meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the agitator is located is an existing source or the owner or operator designates less than three percent of the total number of agitators in a new source as difficult-to-monitor; and

(3) The owner or operator follows a written plan that requires monitoring of the agitator at least once per calendar year.

(i) Any agitator that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from the monitoring requirements of paragraphs (a) through (d) of this section.

(j) Any agitator that is designated, as described in section 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor agitator is exempt from the requirements of paragraphs (a) through (d) of this section if:

(1) The owner or operator of the agitator determines that the agitator is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) through (d) of this section; and

(2) The owner or operator of the agitator has a written plan that requires monitoring of the agitator as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

2.o Section 63.174 Standards: Connectors in gas/vapor service and in light liquid service.

(a) The owner or operator of a process unit subject to this subpart shall monitor all connectors in gas/vapor and light liquid service, except as provided in section 63.162(b) of this subpart, and in paragraphs (f) through (h) of this section, at the intervals specified in paragraph (b) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in section 63.180(b) of this subpart.

(2) If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

(b) The owner or operator shall monitor for leaks at the intervals specified in either paragraph (b)(1) or (b)(2) of this section and in paragraph (b)(3) of this section.

(1) For each group of existing process units within an existing source, by no later than 12 months after the compliance date, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

(2) For new sources, within the first 12 months after initial start-up or by no later than 12 months after the date of promulgation of a specific subpart that references this subpart, whichever is later, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

(3) After conducting the initial survey required in paragraph (b)(1) or (b)(2) of this section, the owner or operator shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section, except as provided in paragraph (c)(2) of this section:

(i) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period.

(ii) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. An owner or operator may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period.

(iii) If the owner or operator of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the owner or operator may monitor the connectors one time every 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years.

(iv) If a process unit complying with the requirements of paragraph (b) of this section using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the owner or operator shall increase the monitoring frequency to one time every 2 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.

(v) If a process unit complying with requirements of paragraph (b)(3)(iii) of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the owner or operator shall increase the monitoring frequency to one time per year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.

(4) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section 63.180(b)(6).

(c)(1)(i) Except as provided in paragraph (c)(1)(ii) of this section, each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of paragraph (i)(2) of this section.

(ii) As an alternative to the requirements in paragraph (c)(1)(i) of this section, an owner or operator may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the owner or operator may not count nonrepairable connectors for the purposes of paragraph (i)(2) of this section. The owner or operator shall calculate the percent leaking connectors for the monitoring periods described in paragraph (b) of this section, by setting the nonrepairable component, CAN, in the equation in paragraph (i)(2) of this section to zero for all monitoring periods.

(iii) An owner or operator may switch alternatives described in paragraphs (c)(1) (i) and (ii) of this section at the end of the current monitoring period he is in, provided that it is reported as required in section 63.182 of this subpart and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch.

(2) As an alternative to the requirements of paragraph (b)(3) of this section, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before the dates specified in paragraph (c)(2)(iii) or (c)(2)(iv) of this section may:

(i) Comply with the requirements of section 63.169 of this subpart, and

(ii) Be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutants service after having been opened or otherwise had the seal broken. If that monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section.

(iii) For sources subject to Subparts F and I of this part, the provisions of paragraph (c)(2) of this section apply to screwed connectors installed before December 31, 1992.

(iv) For sources not identified in paragraph (c)(2)(iii) of this section, the provisions of paragraph (c)(2) of this section apply to screwed connectors installed before the date of proposal of the applicable subpart of this part that references this subpart.

(d) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in paragraph (g) of this section and in section 63.171 of this subpart. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(e) [Reserved]

(f) Any connector that is designated, as described in section 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor connector is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with paragraphs (a) through (e) of this section; and

(2) The owner or operator has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable.

(g) Any connector that is designated, as described in section 63.181(b)(7)(iii) of this subpart, as an unsafe-to-repair connector is exempt from the requirements of paragraphs (a), (d), and (e) of this section if:

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraph (d) of this section; and

(2) The connector will be repaired before the end of the next scheduled process unit shutdown.

(h) (1) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (c) of this section and from the record keeping and reporting requirements of section 63.181 and section 63.182 of this subpart. An inaccessible connector is one that is:

(i) Buried;

(ii) Insulated in a manner that prevents access to the connector by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground;

(v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold; or

(vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) If any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in section 63.171 of this subpart and paragraph (g) of this section.

(3) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(i) For use in determining the monitoring frequency, as specified in paragraph (b) of this section, the percent leaking connectors shall be calculated as specified in paragraphs (i)(1) and (i)(2) of this section.

(1) For the first monitoring period, use the following equation:

% CL = CL/(Ct + CC) × 100

where:

% CL= Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b) of this section.
CL= Number of connectors measured at 500 parts per million or greater, by the method specified in section 63.180(b) of this subpart.
Ct= Total number of monitored connectors in the process unit.
CC= Optional credit for removed connectors = 0.67 × net (i.e., total removed - total added) number of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then CC= 0.

(2) For subsequent monitoring periods, use the following equation:

% CL = [(CL – CAN)/(Ct + CC)] × 100

where:

% CL= Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b) of this section.
CL= Number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in section 63.180(b) of this subpart.
CAN= Number of allowable nonrepairable connectors, as determined by monitoring required in paragraphs (b)(3) and (c) of this section, not to exceed 2 percent of the total connector population, Ct.
Ct= Total number of monitored connectors, including nonrepairables, in the process unit.
CC= Optional credit for removed connectors = 0.67 × net number (i.e., total removed - total added) of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then CC= 0.

(j) Optional credit for removed connectors. If an owner or operator eliminates a connector subject to monitoring under paragraph (b) of this section, the owner or operator may receive credit for elimination of the connector, as described in paragraph (i) of this section, provided the requirements in paragraphs (j)(1) through (j)(4) are met.

(1) The connector was welded after the date of proposal of the specific subpart that references this subpart.

(2) The integrity of the weld is demonstrated by monitoring it according to the procedures in section 63.180(b) of this subpart or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.

(3) Welds created after the date of proposal but before the date of promulgation of a specific subpart that references this subpart are monitored or tested by 3 months after the compliance date specified in the applicable subpart.

(4) Welds created after promulgation of the subpart that references this subpart are monitored or tested within 3 months after being welded.

(5) If an inadequate weld is found or the connector is not welded completely around the circumference, the connector is not considered a welded connector and is therefore not exempt from the provisions of this subpart.

2.p Section 63.175 Quality improvement program for valves.

(a) In Phase III, an owner or operator may elect to comply with one of the alternative quality improvement programs specified in paragraphs (d) and (e) of this section. The decision to use one of these alternative provisions to comply with the requirements of section 63.168(d)(1)(ii) of this subpart must be made during the first year of Phase III for existing process units and for new process units.

(b) An owner or operator of a process unit subject to the requirements of paragraph (d) or (e) of this section shall comply with those requirements until the process unit has fewer than 2 percent leaking valves, calculated as a rolling average of 2 consecutive quarters, as specified in section 63.168(e) of this subpart.

(c) After the process unit has fewer than 2 percent leaking valves, the owner or operator may elect to comply with the requirements in section 63.168 of this subpart, to continue to comply with the requirements in paragraph (e) (or (d), if appropriate) of this section, or comply with both the requirements in section 63.168 and section 63.175.

(1) If the owner or operator elects to continue the quality improvement program, the owner or operator is exempt from the requirements for performance trials as specified in paragraph (e)(6) of this section, or further progress as specified in paragraph (d)(4) of this section, as long as the process unit has fewer than 2 percent leaking valves calculated according to section 63.168(e).

(2) If the owner or operator elects to comply with both paragraph (e) of this section and section 63.168 of this subpart, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in section 63.168 (d)(2), (d)(3), and (d)(4) of this subpart.

(3) If the owner or operator elects not to continue the quality improvement program, the program is no longer an option if the process unit again exceeds 2 percent leaking valves, and in such case, monthly monitoring will be required.

(d) The following requirements shall be met if an owner or operator elects to use a quality improvement program to demonstrate further progress:

(1) The owner or operator shall continue to comply with the requirements in section 63.168 of this subpart except each valve shall be monitored quarterly.

(2) The owner or operator shall collect the following data, and maintain records as required in section 63.181(h)(1) of this subpart, for each valve in each process unit subject to the quality improvement program:

(i) The maximum instrument reading observed in each monitoring observation before repair, the response factor for the stream if appropriate, the instrument model number, and date of the observation.

(ii) Whether the valve is in gas or light liquid service.

(iii) If a leak is detected, the repair methods used and the instrument readings after repair.

(3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.

(4) The owner or operator must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of paragraph (d) of this section, except as provided in paragraphs (d)(4)(ii) and (d)(4)(iii) of this section.

(i) Demonstration of progress shall mean that for each quarter there is at least a 10-percent reduction in the percent leaking valves from the percent leaking valves determined for the preceding monitoring period. The percent leaking valves shall be calculated as a rolling average of two consecutive quarters of monitoring data. The percent reduction shall be calculated using the rolling average percent leaking valves, according to the following:

%LVR = (%LVAVG1 – %LVAVG2 / %LVAVG1 × 100

where:

%LVR=Percent leaking valve reduction.
%LVAVG1=(%VLi + %Vli+1)/2.
%LVAVG2=(%VLi+1 + %VLi+2)/2. where:
%VLi, %VLi+1, %VLi+2 are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

(ii) An owner or operator who fails for two consecutive rolling averages to demonstrate at least a 10-percent reduction per quarter in percent leaking valves, and whose overall average percent reduction based on two or more rolling averages is less than 10 percent per quarter, shall either comply with the requirements in section 63.168(d)(1)(i) of this subpart using monthly monitoring or shall comply using a quality improvement program for technology review as specified in paragraph (e) of this section. If the owner or operator elects to comply with the requirements of paragraph (e) of this section, the schedule for performance trials and valve replacements remains as specified in paragraph (e) of this section.

(iii) As an alternative to the provisions in paragraph (d)(4)(i), an owner or operator may use the procedure specified in paragraphs (d)(4)(iii)(A) and (d)(4)(iii)(B) of this section to demonstrate progress in reducing the percent leaking valves.

(A) The percent reduction that must be achieved each quarter shall be calculated as follows:

$$\%RR = \frac{\%V_L - 2\%}{0.10}$$

%RR = percent reduction required each quarter, as calculated according to section 63.168(e)
%VL = percent leaking valves, calculated according to section 63.168(e), at the time elected to use provisions of section 63.168(d)(1)(ii).

(B) The owner or operator shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section 63.175(d) of this subpart.

(e) The following requirements shall be met if an owner or operator elects to use a quality improvement program of technology review and improvement:

(1) The owner or operator shall comply with the requirements in section 63.168 of this subpart except the requirement for monthly monitoring in section 63.168(d)(1)(i) of this subpart does not apply.

(2) The owner or operator shall collect the data specified below, and maintain records as required in section 63.181(h)(2), for each valve in each process unit subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or group of process units basis. The data shall include the following:

(i) Valve type (e.g., ball, gate, check); valve manufacturer; valve design (e.g., external stem or actuating mechanism, flanged body); materials of construction; packing material; and year installed.

(ii) Service characteristics of the stream such as operating pressure, temperature, line diameter, and corrosivity.

(iii) Whether the valve is in gas or light liquid service.

(iv) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if adjusted, instrument model number, and date of the observation.

(v) If a leak is detected, the repair methods used and the instrument readings after repair.

(vi) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.

(4) The owner or operator shall inspect all valves removed from the process unit due to leaks. The inspection shall determine which parts of the valve have failed and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.

(5)(i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (e)(2) of this section to determine the services, operating or maintenance practices, and valve designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to identify any superior performing valve technologies that are applicable to the service(s), operating conditions, or valve designs associated with poorer than average emission performance. A superior performing valve technology is one for which a group of such valves has a leak frequency of less than 2 percent for specific applications in such a process unit. A candidate superior performing valve technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 2 percent leaking valves in the process unit.

(iii) The analysis shall include consideration of:

(A) The data obtained from the inspections of valves removed from the process unit due to leaks,

(B) Information from the available literature and from the experience of other plant sites that will identify valve designs or technologies and operating conditions associated with low emission performance for specific services, and

(C) Information on limitations on the service conditions for the valve design and operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of Phase III. The first analysis shall be performed using a minimum of two quarters of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify superior performing valve designs or technologies that can be applied to the operating conditions and services identified as having poorer than average performance, except as provided in paragraph (e)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit the valve designs or technologies that have been identified by others as having low emission performance.

(i) The trial program shall include on-line trials of valves or operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 2 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing valve technologies is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in section 63.181(h)(5)(ii) of this subpart.

(ii) The number of valves in the trial evaluation program shall be the lesser of 1 percent or 20 valves for programs involving single process units and the lesser of 1 percent or 50 valves for programs involving groups of process units.

(iii) The trial evaluation program shall specify and include documentation of:

(A) The candidate superior performing valve designs or technologies to be evaluated, the stages for evaluating the identified candidate valve designs or technologies, including the estimated time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and

(D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial valves.

(iv) The performance trials shall initially be conducted for, at least, a 6-month period beginning not later than 18 months after the start of Phase III. Not later than 24 months after the start of Phase III, the owner or operator shall have identified valve designs or technologies that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (e)(6)(vi) of this section. The compilation of candidate and demonstrated superior emission performance valve designs or technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 total employees shall be exempt from trial evaluations of valves. Plant sites exempt from the trial evaluations of valves shall begin the program at the start of the fourth year of Phase III.

(vi) An owner or operator who has conducted performance trials on all candidate superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible candidate superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) Each owner or operator who elects to use a quality improvement program for technology review and improvement shall prepare and implement a valve quality assurance program that details purchasing specifications and maintenance procedures for all valves in the process unit. The quality assurance program may establish any number of categories, or classes, of valves as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (e)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (e)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be reviewed and, as appropriate, updated each year as long as the process unit has 2 percent or more leaking valves.

(i) The quality assurance program shall:

(A) Establish minimum design standards for each category of valves. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the valve;

(C) Include a written procedure for bench testing of valves that specifies performance criteria for acceptance of valves and specifies criteria for the precision and accuracy of the test apparatus. All valves repaired off-line after preparation of the quality assurance plan shall be bench-tested for leaks. This testing may be conducted by the owner or operator of the process unit, by the vendor, or by a designated representative. The owner or operator shall install only those valves that have been documented through bench-testing to be nonleaking.

(D) Require that all valves repaired on-line be monitored using the method specified in section 63.180(b) of this Subpart for leaks for 2 successive months, after repair.

(E) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the process unit or by a designated representative.

(F) Detail off-line valve maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished valves will meet the design specifications for the valve type and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees; and no later than the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees.

(8) Beginning at the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees and at the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees, each valve that is replaced for any reason shall be replaced with a new or modified valve that complies with the quality assurance standards for the valve category and that is identified as superior emission performance technology. Superior emission performance technology means valves or valve technologies identified with emission performance that, combined with appropriate process, operating, and maintenance practices, will result in less than 2 percent leaking valves for specific applications in a large population, except as provided in paragraph (e)(8)(ii) of this section.

(i) The valves shall be maintained as specified in the quality assurance program.

(ii) If a superior emission performance technology cannot be identified, then valve replacement shall be with one of (if several) the lowest emission performance technologies that has been identified for the specific application.

2.q Section 63.176 Quality improvement program for pumps.

(a) In Phase III, if, on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit (or plant site) or three pumps in a process unit (or plant site) leak, the owner or operator shall comply with the requirements of this section as specified below:

(1) Pumps that are in food/medical service or in polymerizing monomer service shall comply with all requirements except for those specified in paragraph (d)(8) of this section.

(2) Pumps that are not in food/medical or polymerizing monomer service shall comply with all requirements of this section.

(b) The owner or operator shall comply with the requirements of this section until the number of leaking pumps is less than the greater of either 10 percent of the pumps or three pumps, calculated as a 6-month rolling average, in the process unit (or plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in section 63.163 of this subpart.

(c) If in a subsequent monitoring period, the process unit (or plant site) has greater than 10 percent of the pumps leaking or three pumps leaking (calculated as a 6-month rolling average), the owner or operator shall resume the quality improvement program starting at performance trials.

(d) The quality improvement program shall include the following:

(1) The owner or operator shall comply with the requirements in section 63.163 of this subpart.

(2) The owner or operator shall collect the following data, and maintain records as required in section 63.181(h)(3), for each pump in each process unit (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or plant site basis.

(i) Pump type (e.g., piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (e.g., external shaft, flanged body); materials of construction; if applicable, barrier fluid or packing material; and year installed.

(ii) Service characteristics of the stream such as discharge pressure, temperature, flow rate, corrosivity, and annual operating hours.

(iii) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if appropriate, instrument model number, and date of the observation.

(iv) If a leak is detected, the repair methods used and the instrument readings after repair.

(v) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

(4) The owner or operator shall inspect all pumps or pump seals which exhibited frequent seal failures and were removed from the process unit due to leaks. The inspection shall determine the probable cause of the pump seal failure or of the pump leak and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.

(5)(i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (d)(2) of this section to determine the services, operating or maintenance practices, and pump or pump seal designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to determine if there are superior performing pump or pump seal technologies that are applicable to the service(s), operating conditions, or pump or pump seal designs associated with poorer than average emission performance. A superior performing pump or pump seal technology is one with a leak frequency of less than 10 percent for specific applications in the process unit or plant site. A candidate superior performing pump or pump seal technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 10 percent leaking pumps in the process unit (or plant site).

(iii) The analysis shall include consideration of:

(A) The data obtained from the inspections of pumps and pump seals removed from the process unit due to leaks;

(B) Information from the available literature and from the experience of other plant sites that will identify pump designs or technologies and operating conditions associated with low emission performance for specific services; and

(C) Information on limitations on the service conditions for the pump seal technology operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a plant site, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of the quality improvement program. The first analysis shall be performed using a minimum of 6 months of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify use of superior performing pump seal technology or pumps that can be applied to the areas identified as having poorer than average performance, except as provided in paragraph (d)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit (or plant site) the pump designs or seal technologies, and operating and maintenance practices that have been identified by others as having low emission performance.

(i) The trial program shall include on-line trials of pump seal technologies or pump designs and operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 10 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing pump seal technologies or pumps is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in section 63.181(h)(5)(ii).

(ii) The number of pump seal technologies or pumps in the trial evaluation program shall be the lesser of 1 percent or two pumps for programs involving single process units and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units. The minimum number of pumps or pump seal technologies in a trial program shall be one.

(iii) The trial evaluation program shall specify and include documentation of:

(A) The candidate superior performing pump seal designs or technologies to be evaluated, the stages for evaluating the identified candidate pump designs or pump seal technologies, including the time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and

(D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial pump seal technologies or pumps.

(iv) The performance trials shall initially be conducted, at least, for a 6-month period beginning not later than 18 months after the start of the quality improvement program. No later than 24 months after the start of the quality improvement program, the owner or operator shall have identified pump seal technologies or pump designs that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (d)(6)(vi) of this section. The initial list of superior emission performance pump designs or pump seal technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 employees shall be exempt from trial evaluations of pump seals or pump designs. Plant sites exempt from the trial evaluations of pumps shall begin the pump seal or pump replacement program at the start of the fourth year of the quality improvement program.

(vi) An owner or operator who has conducted performance trials on all alternative superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible alternative superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) Each owner or operator shall prepare and implement a pump quality assurance program that details purchasing specifications and maintenance procedures for all pumps and pump seals in the process unit. The quality assurance program may establish any number of categories, or classes, of pumps as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (d)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (d)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be updated each year as long as the process unit has the greater of either 10 percent or more leaking pumps or has three leaking pumps.

(i) The quality assurance program shall:

(A) Establish minimum design standards for each category of pumps or pump seal technology. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the pump or the pump seal;

(C) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the plant site or process unit or by a designated representative; and

(D) Detail off-line pump maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished pumps and pump seals will meet the design specifications for the pump category and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees; and no later than the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees.

(8) Beginning at the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees and at the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees, the owner or operator shall replace, as described in paragraphs (d)(8)(i) and (d)(8)(ii) of this section, the pumps or pump seals that are not superior emission performance technology with pumps or pump seals that have been identified as superior emission performance technology and that comply with the quality assurance standards for the pump category. Superior emission performance technology is that category or design of pumps or pump seals with emission performance which, when combined with appropriate process, operating, and maintenance practices, will result in less than 10 percent leaking pumps for specific applications in the process unit or plant site. Superior emission performance technology includes material or design changes to the existing pump, pump seal, seal support system, installation of multiple mechanical seals or equivalent, or pump replacement.

(i) Pumps or pump seals shall be replaced at the rate of 20 percent per year based on the total number of pumps in light liquid service. The calculated value shall be rounded to the nearest nonzero integer value. The minimum number of pumps or pump seals shall be one. Pump replacement shall continue until all pumps subject to the requirements of section 63.163 of this subpart are pumps determined to be superior performance technology.

(ii) The owner or operator may delay replacement of pump seals or pumps with superior technology until the next planned process unit shutdown, provided the number of pump seals and pumps replaced is equivalent to the 20 percent or greater annual replacement rate.

(iii) The pumps shall be maintained as specified in the quality assurance program.

2.r Section 63.177 Alternative means of emission limitation: General.

(a) Permission to use an alternative means of emission limitation under section 112(h)(3) of the Act shall be governed by the following procedures in paragraphs (b) through (e) of this section.

(b) Where the standard is an equipment, design, or operational requirement:

(1) Each owner or operator applying for permission to use an alternative means of emission limitation under section 63.6(g) of Subpart A of this part shall be responsible for collecting and verifying emission performance test data for an alternative means of emission limitation.

(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Where the standard is a work practice:

(1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation.

(2) For each kind of equipment for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.

(3) For each kind of equipment for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for permission shall commit, in writing, for each kind of equipment to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.

(5) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.

(6) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same or greater emission reduction as the required work practices of this subpart.

(d) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.

(e)(1) Manufacturers of equipment used to control equipment leaks of an organic HAP may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the organic HAP achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will grant permission according to the provisions of paragraphs (b), (c), and (d) of this section.

2.s Section 63.178 Alternative means of emission limitation: Batch processes.

(a) As an alternative to complying with the requirements of sections 63.163 through 63.171 and sections 63.173 through 63.176, an owner or operator of a batch process that operates in organic HAP service during the calendar year may comply with one of the standards specified in paragraphs (b) and (c) of this section, or the owner or operator may petition for approval of an alternative standard under the provisions of section 63.177 of this subpart. The alternative standards of this section provide the options of pressure testing or monitoring the equipment for leaks. The owner or operator may switch among the alternatives provided the change is documented as specified in section 63.181.

(b) The following requirements shall be met if an owner or operator elects to use pressure testing of batch product-process equipment to demonstrate compliance with this subpart. An owner or operator who complies with the provisions of this paragraph is exempt from the monitoring provisions of section 63.163, sections 63.168 and 63.169, and sections 63.173 through 63.176 of this subpart.

(1) Each time equipment is reconfigured for production of a different product or intermediate, the batch product-process equipment train shall be pressure-tested for leaks before organic HAP is first fed to the equipment and the equipment is placed in organic HAP service.

(i) When the batch product-process train is reconfigured to produce a different product, pressure testing is required only for the new or disturbed equipment.

(ii) Each batch product process that operates in organic HAP service during a calendar year shall be pressure tested at least once during that calendar year.

(iii) Pressure testing is not required for routine seal breaks, such as changing hoses or filters, which are not part of the reconfiguration to produce a different product or intermediate.

(2) The batch product process equipment shall be tested either using the procedures specified in section 63.180(f) of this subpart for pressure or vacuum loss or with a liquid using the procedures specified in section 63.180(g) of this subpart.

(3)(i) For pressure or vacuum tests, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 psig) in 1 hour or if there is visible, audible, or olfactory evidence of fluid loss.

(ii) For pressure tests using a liquid, a leak is detected if there are indications of liquids dripping or if there is other evidence of fluid loss.

(4)(i) If a leak is detected, it shall be repaired and the batch product-process equipment shall be retested before start-up of the process.

(ii) If a batch product-process fails the retest or the second of two consecutive pressure tests, it shall be repaired as soon as practicable, but not later than 30 calendar days after the second pressure test, provided the conditions specified in paragraph (d) of this section are met.

(c) The following requirements shall be met if an owner or operator elects to monitor the equipment to detect leaks by the method specified in section 63.180(b) of this subpart to demonstrate compliance with this subpart.

(1) The owner or operator shall comply with the requirements of sections 63.163 through 63.170, and sections 63.172 through 63.176 of this subpart.

(2) The equipment shall be monitored for leaks by the method specified in section 63.180(b) of this subpart when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

(3) The equipment shall be monitored for leaks as specified below:

(i) Each time the equipment is reconfigured for the production of a new product, the reconfigured equipment shall be monitored for leaks within 30 days of start-up of the process. This initial monitoring of reconfigured equipment shall not be included in determining percent leaking equipment in the process unit.

(ii) Connectors shall be monitored in accordance with the requirements in section 63.174 of this subpart.

(iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1 of this subpart. The operating time shall be determined as the proportion of the year the batch product-process that is subject to the provisions of this subpart is operating.

(iv) The monitoring frequencies specified in table 1 of this subpart are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor anytime during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. For example, if the equipment is not operating during the scheduled monitoring period, the monitoring can be done during the next period when the process is operating.

(4) If a leak is detected, it shall be repaired as soon as practicable but not later than 15 calendar days after it is detected, except as provided in paragraph (d) of this section.

(d) Delay of repair of equipment for which leaks have been detected is allowed if the replacement equipment is not available providing the following conditions are met:

(1) Equipment supplies have been depleted and supplies had been sufficiently stocked before the supplies were depleted.

(2) The repair is made no later than 10 calendar days after delivery of the replacement equipment.

2.t Section 63.179 Alternative means of emission limitation: Enclosed-vented process units.

Process units enclosed in such a manner that all emissions from equipment leaks are vented through a closed-vent system to a control device meeting the requirements of section 63.172 of this subpart are exempt from the requirements of section 63.163, through 63.171, and sections 63.173 and 63.174 of this subpart. The enclosure shall be maintained under a negative pressure at all times while the process unit is in operation to ensure that all emissions are routed to a control device.

2.u Section 63.180 Test methods and procedures.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.

(b) Monitoring, as required under this subpart, shall comply with the following requirements:

(1) Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.

(2)(i) Except as provided for in paragraph (b)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR Part 60, Appendix A, except the instrument response factor criteria in Section 3.1.2(a) of

Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.

(ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (b)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (b)(2)(i) of this section.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR Part 60, Appendix A.

(4) Calibration gases shall be:

(i) Zero air (less than 10 parts per million of hydrocarbon in air); and

(ii) Mixtures of methane in air at the concentrations specified in paragraphs (b)(4)(ii)(A) through (b)(4)(ii)(C) of this section. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (b)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(A) For Phase I, a mixture of methane or other compounds, as applicable, in air at a concentration of approximately, but less than, 10,000 parts per million.

(B) For Phase II, a mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million for agitators, 5,000 parts per million for pumps, and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

(C) For Phase III, a mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 2,000 parts per million for pumps in food/medical service; 5,000 parts per million for pumps in polymerizing monomer service; 1,000 parts per million for all other pumps; and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

(iii) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

(5) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

(6) Monitoring data that do not meet the criteria specified in paragraphs (b)(1) through (b)(5) of this section may be used to qualify for less frequent monitoring under the provisions in section 63.168(d)(2) and (d)(3) or section 63.174(b)(3)(ii) or (b)(3)(iii) of this subpart provided the data meet the conditions specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.

(i) The data were obtained before April 22, 1994.

(ii) The departures from the criteria specified in paragraphs (b)(1) through (b)(5) of this section or from the specified monitoring frequency of section 63.168(c) are minor and do not significantly affect the quality of the data. Examples of minor departures are monitoring at a slightly different frequency (such as every six weeks instead of monthly or quarterly), following the performance criteria of section 3.1.2(a) of Method 21 of Appendix A of 40 CFR part 60 instead of paragraph (b)(2) of this section, or monitoring at a different leak definition if the data would indicate the presence or absence of a leak at the concentration specified in this subpart. Failure to use a calibrated instrument is not considered a minor departure.

(c) When equipment is monitored for compliance as required in sections 63.164(i), 63.165(a), and 63.172(f) or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by this subpart, the owner or operator may elect to adjust or not to adjust the instrument readings for background. If an owner or operator elects to not adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (b)(1) through (b)(4) of this section. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (c)(1) through (c)(4) of this section.

(1) The requirements of paragraphs (b) (1) through (4) of this section shall apply.

(2) The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.

(3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR Part 60, Appendix A.

(4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance.

(d) (1) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR Part 60, Appendix A shall be used.

(2)(i) An owner or operator may use good engineering judgment rather than the procedures in paragraph (d)(1) of this section to determine that the percent organic HAP content does not exceed 5 percent by weight. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (d)(1) of this section shall be used to resolve the disagreement.

(ii) Conversely, the owner or operator may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent.

(3) If an owner or operator determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (d)(1) of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.

(4) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.

(e) When a flare is used to comply with section 63.172(d), the owner or operator shall comply with paragraphs (e)(1) through (3) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.

(1) Conduct a visible emission test using the techniques specified in section 63.11(b)(4).

(2) Determine the net heating value of the gas being combusted using the techniques specified in section 63.11(b)(6).

(3) Determine the exit velocity using the techniques specified in either section 63.11(b)(7)(i) (and section 63.11(b)(7)(iii), where applicable) or section 63.11(b)(8), as appropriate.

(f) The following procedures shall be used to pressure test batch product-process equipment for pressure or vacuum loss to demonstrate compliance with the requirements of section 63.178(b)(3)(i) of this subpart.

(1) The batch product-process equipment train shall be pressurized with a gas to a pressure less than the set pressure of any safety relief devices or valves or to a pressure slightly above the operating pressure of the equipment, or alternatively, the equipment shall be placed under a vacuum.

(2) Once the test pressure is obtained, the gas source or vacuum source shall be shut off.

(3) The test shall continue for not less than 15 minutes unless it can be determined in a shorter period of time that the allowable rate of pressure drop or of pressure rise was exceeded. The pressure in the batch product-process equipment shall be measured after the gas or vacuum source is shut off and at the end of the test period. The rate of change in pressure in the batch product-process equipment shall be calculated using the following equation:

$$\Delta \frac{P}{t} = \frac{(|P_f - P_i|)}{(t_f - t_i)}$$

where:

Δ P/t=Change in pressure, psig/hr.
Pf=Final pressure, psig.
Pi=Initial pressure, psig.
tf−ti=Elapsed time, hours.

(4) The pressure shall be measured using a pressure measurement device (gauge, manometer, or equivalent) which has a precision of ±2.5 millimeter mercury in the range of test pressure and is capable of measuring pressures up to the relief set pressure of the pressure relief device. If such a pressure measurement device is not reasonably available, the owner or operator shall use a pressure measurement device with a precision of at least ±10 percent of the test pressure of the equipment and shall extend the duration of the test for the time necessary to detect a pressure loss or rise that equals a rate of one psig per hour.

(5) An alternative procedure may be used for leak testing the equipment if the owner or operator demonstrates the alternative procedure is capable of detecting a pressure loss or rise.

(g) The following procedures shall be used to pressure-test batch product-process equipment using a liquid to demonstrate compliance with the requirements of section 63.178(b)(3)(ii) of this subpart.

(1) The batch product-process equipment train, or section of the train, shall be filled with the test liquid (e.g., water, alcohol) until normal operating pressure is obtained. Once the equipment is filled, the liquid source shall be shut off.

(2) The test shall be conducted for a period of at least 60 minutes, unless it can be determined in a shorter period of time that the test is a failure.

(3) Each seal in the equipment being tested shall be inspected for indications of liquid dripping or other indications of fluid loss. If there are any indications of liquids dripping or of fluid loss, a leak is detected.

(4) An alternative procedure may be used for leak testing the equipment, if the owner or operator demonstrates the alternative procedure is capable of detecting losses of fluid.

2.v Section 63.181 Record keeping requirements.

(a) An owner or operator of more than one process unit subject to the provisions of this subpart may comply with the record keeping requirements for these process units in one record keeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

(b) Except as provided in paragraph (e) of this section, the following information pertaining to all equipment in each process unit subject to the requirements in sections 63.162 through 63.174 of this subpart shall be recorded:

(1)(i) A list of identification numbers for equipment (except connectors exempt from monitoring and record keeping identified in section 63.174 of this subpart and instrumentation systems) subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by section 63.174 (b)(1) or (b)(2) of this subpart.

(ii) A schedule by process unit for monitoring connectors subject to the provisions of section 63.174(a) of this subpart and valves subject to the provisions of section 63.168(d) of this subpart.

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), section 63.164(h), section 63.165(c), or section 63.173(f) of this subpart.

(ii) A list of identification numbers for compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of section 63.164(i) of this subpart.

(iii) Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of section 63.170 of this subpart.

(3)(i) A list of identification numbers for pressure relief devices subject to the provisions in section 63.165(a) of this subpart.

(ii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of this subpart.

(4) Identification of instrumentation systems subject to the provisions of this subpart. Individual components in an instrumentation system need not be identified.

(5) Identification of screwed connectors subject to the requirements of section 63.174(c)(2) of this subpart. Identification can be by area or grouping as long as the total number within each group or area is recorded.

(6) The following information shall be recorded for each dual mechanical seal system:

(i) Design criteria required in sections 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) of this subpart and an explanation of the design criteria; and

(ii) Any changes to these criteria and the reasons for the changes.

(7) The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of section 63.168(h) and (i) of this subpart, agitators subject to the provisions of section 63.173(h) through (j), and connectors subject to the provisions of section 63.174(f) and (g) of this subpart shall be recorded:

(i) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment.

(ii) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment.

(iii) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair.

(8)(i) A list of valves removed from and added to the process unit, as described in section 63.168(e)(1) of this subpart, if the net credits for removed valves is expected to be used.

(ii) A list of connectors removed from and added to the process unit, as described in section 63.174(i)(1) of this subpart, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of this subpart. This is not required unless the net credits for removed connectors is expected to be used.

(9)(i) For batch process units that the owner or operator elects to monitor as provided under section 63.178(c) of this subpart, a list of equipment added to batch product process units since the last monitoring period required in section 63.178(c)(3)(ii) and (3)(iii) of this subpart.

(ii) Records demonstrating the proportion of the time during the calendar year the equipment is in use in a batch process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in use for the process unit. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in section 63.178(c)(3)(iii) of this subpart.

(c) For visual inspections of equipment subject to the provisions of this subpart (e.g., section 63.163(b)(3), section 63.163(e)(4)(i)), the owner or operator shall document that the inspection was conducted and the date of the inspection. The owner or operator shall maintain records as specified in paragraph (d) of this section for leaking equipment identified in this inspection, except as provided in paragraph (e) of this section. These records shall be retained for 2 years.

(d) When each leak is detected as specified in sections 63.163 and 63.164; sections 63.168 and 63.169; and sections 63.172 through 63.174 of this subpart, the following information shall be recorded and kept for 2 years:

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

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

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

(4) Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by section 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(6) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(7)(i) Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in section 63.174(b) of this subpart, as described in section 63.174(c)(1) of this subpart, unless the owner or operator elects to comply with the provisions of section 63.174(c)(1)(ii) of this subpart.

(ii) The date and results of monitoring as required in section 63.174(c) of this subpart. If identification of connectors that have been opened or otherwise had the seal broken is made by location under paragraph (d)(7)(i) of this section, then all connectors within the designated location shall be monitored.

(8) The date and results of the monitoring required in section 63.178(c)(3)(i) of this subpart for equipment added to a batch process unit since the last monitoring period required in section 63.178 (c)(3)(ii) and (c)(3)(iii) of this subpart. If no

leaking equipment is found in this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.

(9) Copies of the periodic reports as specified in section 63.182(d) of this subpart, if records are not maintained on a computerized database capable of generating summary reports from the records.

(e) The owner or operator of a batch product process who elects to pressure test the batch product process equipment train to demonstrate compliance with this subpart is exempt from the requirements of paragraphs (b), (c), (d), and (f) of this section. Instead, the owner or operator shall maintain records of the following information:

(1) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in a batch product process equipment train.

(2) [Reserved]

(3) Physical tagging of the equipment to identify that it is in organic HAP service and subject to the provisions of this subpart is not required. Equipment in a batch product process subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(4) The dates of each pressure test required in section 63.178(b) of this subpart, the test pressure, and the pressure drop observed during the test.

(5) Records of any visible, audible, or olfactory evidence of fluid loss.

(6) When a batch product process equipment train does not pass two consecutive pressure tests, the following information shall be recorded in a log and kept for 2 years:

(i) The date of each pressure test and the date of each leak repair attempt.

(ii) Repair methods applied in each attempt to repair the leak.

(iii) The reason for the delay of repair.

(iv) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.

(v) The date of successful repair.

(f) The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in sections 63.165 (a) and (b) of this subpart. The results shall include:

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

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

(g) The owner or operator shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section for closed-vent systems and control devices subject to the provisions of section 63.172 of this subpart. The records specified in paragraph (g)(1) of this section shall be retained for the life of the equipment. The records specified in paragraphs (g)(2) and (g)(3) of this section shall be retained for 2 years.

(1) The design specifications and performance demonstrations specified in paragraphs (g)(1)(i) through (g)(1)(iv) of this section.

(i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(iii) The flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by section 63.11(b) of Subpart A of this part.

(iv) A description of the parameter or parameters monitored, as required in section 63.172(e) of this subpart, to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(2) Records of operation of closed-vent systems and control devices, as specified in paragraphs (g)(2)(i) through (g)(2)(iii) of this section.

(i) Dates and durations when the closed-vent systems and control devices required in sections 63.163 through 63.166, and section 63.170 of this subpart are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.

(ii) Dates and durations during which the monitoring system or monitoring device is inoperative.

(iii) Dates and durations of start-ups and shutdowns of control devices required in sections 63.163 through 63.166, and section 63.170 of this subpart.

(3) Records of inspections of closed-vent systems subject to the provisions of section 63.172 of this subpart, as specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this section.

(i) For each inspection conducted in accordance with the provisions of section 63.172(f)(1) or (f)(2) of this subpart during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(ii) For each inspection conducted in accordance with the provisions of section 63.172(f)(1) or (f)(2) of this subpart during which leaks were detected, the information specified in paragraph (d) of this section shall be recorded.

(h) Each owner or operator of a process unit subject to the requirements of sections 63.175 and 63.176 of this subpart shall maintain the records specified in paragraphs (h)(1) through (h)(9) of this section for the period of the quality improvement program for the process unit.

(1) For owners or operators who elect to use a reasonable further progress quality improvement program, as specified in section 63.175(d) of this subpart:

(i) All data required in section 63.175(d)(2) of this subpart.

(ii) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.

(iii) The beginning and ending dates while meeting the requirements of section 63.175(d) of this subpart.

(2) For owners or operators who elect to use a quality improvement program of technology review and improvement, as specified in section 63.175(e) of this subpart:

(i) All data required in section 63.175(e)(2) of this subpart.

(ii) The percent leaking valves observed each quarter.

(iii) Documentation of all inspections conducted under the requirements of section 63.175(e)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of section 63.175(e) of this subpart.

(3) For owners or operators subject to the requirements of the pump quality improvement program as specified in section 63.176 of this subpart:

(i) All data required in section 63.176(d)(2) of this subpart.

(ii) The rolling average percent leaking pumps.

(iii) Documentation of all inspections conducted under the requirements of section 63.176(d)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of section 63.176(d) of this subpart.

(4) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.

(5) Records of all analyses required in sections 63.175(e) and 63.176(d) of this subpart. The records will include the following:

(i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.

(ii) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.

(iii) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under sections 63.175(e)(6)(iii) and 63.176(d)(6)(iii) of this subpart.

(iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.

(6) All records documenting the quality assurance program for valves or pumps as specified in sections 63.175(e)(7) and 63.176(d)(7) of this subpart.

(7) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in section 63.175(e)(7) and section 63.176(d)(7) of this subpart.

(8) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in section 63.176(d)(8) of this subpart.

(9) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.

(i) The owner or operator of equipment in heavy liquid service shall comply with the requirements of either paragraph (i)(1) or (i)(2) of this section, as provided in paragraph (i)(3) of this section.

(1) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.

(2) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.

(3) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(j) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit subject to the provisions of this subpart under section 63.160 of this subpart.

(k) Owners and operators choosing to comply with the requirements of section 63.179 of this subpart shall maintain the following records:

(1) Identification of the process unit(s) and the organic HAP's they handle.

(2) A schematic of the process unit, enclosure, and closed-vent system.

(3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

2.w Section 63.182 Reporting requirements.

(a) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.

(1) An Initial Notification described in paragraph (b) of this section, and

(2) A Notification of Compliance Status described in paragraph (c) of this section,

(3) Periodic Reports described in paragraph (d) of this section, and

(4) [Reserved]

(5) [Reserved]

(6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing an existing source up to 1 additional year beyond the compliance date specified in the subpart that references this subpart.

(i) For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application. If the State in which the source is located does not have an approved operating permit program, a request for an extension shall be submitted to the Administrator as a separate submittal. The dates specified in section 63.6(i) of Subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart.

(ii) A request for an extension of compliance must include the data described in section 63.6(i)(6)(i) (A), (B), and (D) of Subpart A of this part.

(iii) The requirements in section 63.6(i)(8) through (i)(14) of Subpart A of this part will govern the review and approval of requests for extensions of compliance with this subpart.

(b) Each owner or operator of an existing or new source subject to the provisions of this subpart shall submit a written Initial Notification to the Administrator, containing the information described in paragraph (b)(1), according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in section 63.9(b)(1) through (b)(3) of Subpart A of this part shall not apply to owners or operators of sources subject to this subpart.

(1) The Initial Notification shall include the following information:

(i) The name and address of the owner or operator;

(ii) The address (physical location) of the affected source;

(iii) An identification of the chemical manufacturing processes subject to this subpart; and

(iv) A statement of whether the source can achieve compliance by the applicable compliance date specified in the subpart in 40 CFR Part 63 that references this subpart.

(2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.

(i) For an existing source, the Initial Notification shall be submitted within 120 days after the date of promulgation of the subpart that references this subpart.

(ii) For a new source that has an initial start-up 90 days after the date of promulgation of this subpart or later, the application for approval of construction or reconstruction required by section 63.5(d) of Subpart A of this part shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of the subpart that references this subpart).

(iii) For a new source that has an initial start-up prior to 90 days after the date of promulgation of the applicable subpart, the Initial Notification shall be submitted within 90 days after the date of promulgation of the subpart that references this subpart.

(c) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 90 days after the compliance dates specified in the subpart in 40 CFR Part 63 that references this subpart, except as provided in paragraph (c)(4) of this section.

(1) The notification shall provide the information listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this section for each process unit subject to the requirements of section 63.163 through section 63.174 of this subpart.

(i) Process unit identification.

(ii) Number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service.

(iii) Method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals").

(iv) Planned schedule for each phase of the requirements in section 63.163 and section 63.168 of this subpart.

(2) The notification shall provide the information listed in paragraphs (c)(2)(i) and (c)(2)(ii) of this section for each process unit subject to the requirements of section 63.178(b) of this subpart.

(i) Batch products or product codes subject to the provisions of this subpart, and

(ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this subpart.

(3) The notification shall provide the information listed in paragraphs (c)(3)(i) and (c)(3)(ii) of this section for each process unit subject to the requirements in section 63.179 of this subpart.

(i) Process unit identification.

(ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of section 63.172 of this subpart.

(4) For existing sources subject to Subpart F of this part, the Notification of Compliance Status shall be submitted for the group of process units with the earliest compliance date specified in section 63.100(k) of Subpart F of this part, by no later than 90 days after the compliance date for that group. The Notification of Compliance Status for each subsequent group shall be submitted as part of the first periodic report that is due not less than 90 days after the compliance date for that group.

(d) The owner or operator of a source subject to this subpart shall submit Periodic Reports.

(1) A report containing the information in paragraphs (d)(2), (d)(3), and (d)(4) of this section shall be submitted semiannually starting 6 months after the Notification of Compliance Status, as required in paragraph (c) of this section. The first periodic report shall cover the first 6 months after the compliance date specified in section 63.100(k)(3) of Subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.

(2) For each process unit complying with the provisions of section 63.163 through section 63.174 of this subpart, the summary information listed in paragraphs (i) through (xvi) of this paragraph for each monitoring period during the 6-month period.

(i) The number of valves for which leaks were detected as described in section 63.168(b) of this subpart, the percent leakers, and the total number of valves monitored;

(ii) The number of valves for which leaks were not repaired as required in section 63.168(f) of this subpart, identifying the number of those that are determined nonrepairable;

(iii) The number of pumps for which leaks were detected as described in section 63.163(b) of this subpart, the percent leakers, and the total number of pumps monitored;

(iv) The number of pumps for which leaks were not repaired as required in section 63.163(c) of this subpart;

(v) The number of compressors for which leaks were detected as described in section 63.164(f) of this subpart;

(vi) The number of compressors for which leaks were not repaired as required in section 63.164(g) of this subpart;

(vii) The number of agitators for which leaks were detected as described in section 63.173(a) and (b) of this subpart;

(viii) The number of agitators for which leaks were not repaired as required in section 63.173(c) of this subpart;

(ix) The number of connectors for which leaks were detected as described in section 63.174(a) of this subpart, the percent of connectors leaking, and the total number of connectors monitored;

(x) [Reserved]

(xi) The number of connectors for which leaks were not repaired as required in section 63.174(d) of this subpart, identifying the number of those that are determined nonrepairable;

(xii) [Reserved]

(xiii) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.

(xiv) The results of all monitoring to show compliance with sections 63.164(i), 63.165(a), and 63.172(f) of this subpart conducted within the semiannual reporting period.

(xv) If applicable, the initiation of a monthly monitoring program under section 63.168(d)(1)(i) of this subpart, or a quality improvement program under either sections 63.175 or 63.176 of this subpart.

(xvi) If applicable, notification of a change in connector monitoring alternatives as described in section 63.174(c)(1) of this subpart.

(xvii) If applicable, the compliance option that has been selected under section 63.172(n).

(3) For owners or operators electing to meet the requirements of section 63.178(b) of this subpart, the report shall include the information listed in paragraphs (i) through (v) of this paragraph for each process unit.

(i) Batch product process equipment train identification;

(ii) The number of pressure tests conducted;

(iii) The number of pressure tests where the equipment train failed the pressure test;

(iv) The facts that explain any delay of repairs; and

(v) The results of all monitoring to determine compliance with section 63.172(f) of this subpart.

(4) The information listed in paragraph (c) of this section for the Notification of Compliance Status for process units with later compliance dates. Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

3. 40 CFR Part 60, Subpart VV - Synthetic Organic Chemical Manufacturing: Equipment Leaks of VOC

3.a Section 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in section 60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in section 60.486(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) is exempt from section 60.482.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from section 60.482.

(4) Any affected facility that produces beverage alcohol is exempt from section 60.482.

(5) Any affected facility that has no equipment in VOC service is exempt from section 60.482.

(e) Alternative means of compliance -- (1) Option to comply with part 65. Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of sections 60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of section 60.485(d), (e), and (f), and section 60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) Part 60, subpart A. Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with sections 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

3.b Section 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation:

$$P = R \times A,$$

where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation: A = Y × (B ÷ 100);

(2) The percent Y is determined from the following equation:

$$Y = 1.0 - 0.575 \log X,$$

where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable for B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5
DDD	12.5
GGG	7.0
KKK	4.5

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007-2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in section 60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of section 60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in section 60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in section 60.489.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in section 60.2 Definitions.

3.c Section 60.482-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of sections 60.482-1 through 60.482-10 or section 60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with sections 60.482-1 to 60.482-10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in section 60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of sections 60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, and 60.482-10 as provided in section 60.484.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of sections 60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, or 60.482-10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of sections 60.482-2 to 60.482-10 if it is identified as required in section 60.486(e)(5).

3.d Section 60.482-2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in section60.485(b), except as provided in section 60.482-1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 60.482-9.

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

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), Provided the following requirements are met:

(1) Each dual mechanical seal system is::

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipment 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 that complies with the requirements of section 60.482-10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6)(i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 60.482-9.

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

(e) Any pump that is designated, as described in section 60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in section 60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of section 60.482-10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in section 60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

3.e Section 60.482-3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in section 60.482-1(c) and paragraph (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of section 60.482-10; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 60.482-9.

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

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of section 60.482-10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in section 60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)-(h) if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in section 60.485(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of section 60.14 or section 60.15 is exempt from section 60.482(a), (b), (c), (d), (e), and (h), provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

3.f Section 60.482-4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in section 60.485(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in section 60.482-9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in section 60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in section 60.482-10 is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in section 60.482-9.

3.g Section 60.482-5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in section 60.482-1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of section 60.482-10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

3.h Section 60.482-6 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in section 60.482-1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

3.i Section 60.482-7 Standards: Valves in gas/vapor service and in light liquid service.

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in section 60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), section 60.483-1, 2, and section 60.482-1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in section 60.482-9.

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

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in section 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in section 60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in section 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in section 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either becomes an affected facility through section 60.14 or section 60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

3.j Section 60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in section 60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in section 60.482-9.

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

(d) First attempts at repair include, but are not limited to, the best practices described under section 60.482-7(e).

3.k Section 60.482-9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with section 60.482-10.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown

will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

3.l Section 60.482-10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of section60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in section 60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in section 60.485(b); and

(ii) Conduct annual inspections according to the procedures in section 60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through sections 60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in section 60.486(c).

(4) For each inspection conducted in accordance with section 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

3.m Section 60.483-1 Alternative standards for valves -- allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in section 60.487(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with section 60.482-7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in section 60.485(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.

3.n Section 60.483-2 Alternative standards for valves -- skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in section 60.487(d).

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in section 60.482-7.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in section 60.482-7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

3.o Section 60.484 Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalance for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).

(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register.

(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

3.p Section 60.485 Test methods and procedures.

(a) In conducting the performance tests required in section 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in section 60.8(b).

(b) The owner or operator shall determine compliance with the standards in sections 60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in sections 60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference -- see section 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H2O at 68 °F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference -- see section 60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H2O at 68 °F) is equal to or greater than 20 percent by weight.

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

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

Vmax = Maximum permitted velocity, m/sec (ft/sec)

HT = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K1 = 8.706 m/sec (metric units)

= 28.56 ft/sec (English units)

K2 = 0.7084 m 4/(MJ-sec) (metric units)

= 0.087 ft 4/(Btu-sec) (English units)

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K\sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740 × 10 7 (g-mole)(MJ)/ (ppm-scm-kcal) (metric units)

= 4.674 × 10 8 [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

Ci = Concentration of sample component "i," ppm

Hi = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference -- see section 60.17) shall be used to determine the concentration of sample component "i."

(6) ASTM D2382-76 or 88 or D4809-95 (incorporated by reference -- see section 60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

3.q Section 60.486 Record keeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the record keeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the record keeping requirements for these facilities in one record keeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in sections 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in section 60.482-7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in sections 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) "Above 10,000" if the maximum instrument reading measured by the methods specified in section 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

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

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in section 60.482-10 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in section 60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in sections 60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in sections 60.482-2, 60.482-3, 60.482-4, and 60.482-5.

(e) The following information pertaining to all equipment subject to the requirements in sections 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of sections 60.482-2(e), 60.482-3(i) and 60.482-7(f).

(ii) The designation of equipment as subject to the requirements of section 60.482-2(e), section 60.482-3(i), or section 60.482-7(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with section 60.482-4.

(4)(i) The dates of each compliance test as required in sections 60.482-2(e), 60.482-3(i), 60.482-4, and 60.482-7(f).

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

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of section 60.482-7(g) and (h) and to all pumps subject to the requirements of section 60.482-2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with section 60.483-2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in sections 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in section 60.480(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of section 60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

3.r Section 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of section 60.482-7, excluding those valves designated for no detectable emissions under the provisions of section 60.482-7(f).

(3) Number of pumps subject to the requirements of section 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of section 60.482-2(e) and those pumps complying with section 60.482-2(f).

(4) Number of compressors subject to the requirements of section 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of section 60.482-3(i) and those compressors complying with section 60.482-3(h).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in section 60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in section 60.482(7)(b) or section 60.483-2,

(ii) Number of valves for which leaks were not repaired as required in section 60.482-7(d)(1),

(iii) Number of pumps for which leaks were detected as described in section 60.482-2(b) and (d)(6)(i),

(iv) Number of pumps for which leaks were not repaired as required in section 60.482-2(c)(1) and (d)(6)(ii),

(v) Number of compressors for which leaks were detected as described in section 60.482-3(f),

(vi) Number of compressors for which leaks were not repaired as required in section 60.482-3(g)(1), and

(vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of sections 60.483-1 or 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with section 60.8 of the General Provisions. The provisions of section 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

3.s Section 60.488 Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable new facility" under section 60.15: pump seals, nuts and bolts, rupture disks, and packings.

(b) Under section 60.15, the "fixed capital cost of new components" includes the fixed capital cost of all depreciable components (except components specified in section 60.488 (a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the "Applicability and designation of affected facility" section of the

appropriate subpart.) For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

3.t Section 60.489 List of chemicals produced by affected facilities.

The following chemicals are produced, as intermediates or final products, by process units covered under this subpart for the purposes of this permit: formaldehyde, methanol, pentaerythritol and sodium formate.

4. OAC rule 3745-21-09(DD) - Leaks from process units that produce organic chemicals.

(1) Except where exempted under paragraph (DD)(17) of this rule, each owneror operator of a process unit that produces as an intermediate or final product one or more of the organic chemicals identified in appendix A of this rule shall comply with the requirements in paragraphs (DD)(2) to (DD)(6) of this rule no later than the date specified in paragraph (C)(38) of rule 3745-21-04 of the Administrative Code.

(2) Leak detection and repair program.

(a) A leak detection and repair program for equipment in the process unit shall be developed and implemented in accordance with the requirements specified in paragraphs (DD)(2)(b) to (DD)(2)(m) of this rule.

(b) Except as otherwise provided in paragraphs (DD)(2)(c) and (DD)(2)(d) of this rule, equipment shall be monitored for leaks in accordance with the method specified in paragraph (F) of rule 3745-21-10 of the Administrative Code, as follows:

(i) Any pump in light liquid service shall be monitored monthly.

(ii) Any valve in gas/vapor service or in light liquid service shall bemonitored monthly, except that quarterly monitoring may be employed anytime after no leaks are detected during two consecutive months. The quarterly monitoring shall begin with the next calendar quarter following the two consecutive months of no detected leaks and shall be conducted in the first month of each calendar quarter. The quarterly monitoring may continue until a leak is detected, at which time monthly monitoring shall be employed again.

(iii) Any of the following equipment shall be monitored within five calendar days after evidence of a leak or potential leak from the equipment by visual, audible, olfactory, or other detection method:

(a) Any pump in heavy liquid service;

(b) Any valve in heavy liquid service;

(c) Any pressure relief device in light liquid service or in heavy liquid service; and

(d) Any flange or other connector.

(iv) Any equipment in which a leak is detected as described in paragraph (DD)(2)(g) of this rule shall be monitored within five working days after each attempt to repair, unless the owner or operator believes that the equipment was not successfully repaired.

(c) For any valve in gas/vapor service or in light liquid service, an alternative monitoring schedule may be employed in lieu of the monitoring schedule specified in paragraph (DD)(2)(b)(ii) of this rule as follows:

(i) The valve is designated as difficult to monitor and is monitored each calendar year, provided the following conditions are met:

(a) Construction of the process unit commenced prior to May 9, 1986.

(b) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than six feet above a support surface.

(c) The owner or operator of the valve has a written plan that requires monitoring of the valve at least once per year.

(ii) The valve is designated as unsafe to monitor and is monitored as frequently as practical during safe to monitor times, provided the following conditions are met:

(a) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of monitoring on a monthly basis.

(b) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practical during safe to monitor times.

(iii) The valve is subject to an alternative monitoring schedule based on a skip period as specified in paragraph (DD)(12) of this rule.

(d) Excluded from the monitoring requirements of paragraph (DD)(2)(b) of this rule are the following equipment:

(i) Any pump that has no externally actuated shaft penetrating the pump housing and that is designated for no detectable emissions as provided in paragraph (DD)(7) of this rule;

(ii) Any pump that is equipped with a dual mechanical seal which has a barrier fluid system and sensor that comply with the requirements specified in paragraph (DD)(8) of this rule;

(iii) Any pump that is equipped with a closed vent system capable of capturing and transporting any leakage from the pump seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in paragraphs (DD)(9) and (DD)(10) of this rule;

(iv) Any valve that has no externally actuated stem penetrating the valve and that is designated for no detectable emissions as provided in paragraph (DD)(7) of this rule; and

(v) Any valve that is subject to the alternative monitoring standard for valves based on the percentage of valves leaking as provided in paragraph (DD)(13) of this rule.

(e) Any pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, unless the pump is equipped with a closed vent system capable of transporting any leakage from the pump seal to control equipment, and the closed vent system and control equipment comply with the requirements specified in paragraphs (DD)(9) and (DD)(10) of this rule.

(f) Any sensor employed pursuant to paragraph (DD)(2)(d)(ii) or (DD)(3)(b) of this rule shall be checked daily, unless the sensor is equipped with an audible alarm.

(g) A leak is detected:

(i) When a concentration of ten thousand ppmv or greater is measured from a potential leak interface of any equipment that is monitored for leaks using the method in paragraph (F) of rule 3745-21-10 of the Administrative Code;

(ii) When there is an indication of liquids dripping from the seal of a pump in light liquid service; or

(iii) When a sensor employed pursuant to paragraph (DD)(2)(d)(ii) or (DD)(3)(b) of this rule indicates failure of the seal system, the barrier fluid system, or both.

(h) When a leak is detected as described in paragraph (DD)(2)(g) of this rule, the following procedures shall be followed:

(i) A weatherproof and readily visible identification tag, marked with the equipment identification number, is immediately attached to the leaking equipment.

(ii) A record of the leak and any attempt to repair the leak is entered into the leak repair log kept pursuant to paragraph (DD)(2)(k) of this rule.

(iii) The identification tag attached to the leaking equipment, other than a valve that is monitored pursuant to paragraph (DD)(2)(b)(ii) of this rule, may be removed after the leaking equipment is repaired.

(iv) The identification tag attached to a leaking valve that is monitored pursuant to paragraph (DD)(2)(b)(ii) of this rule may be removed after the leaking valve is repaired, monitored for leaks for two consecutive months as specified in paragraph (DD)(2)(b)(ii) of this rule, and found to have no detected leaks during those two consecutive months.

(i) When a leak is detected as described in paragraph (DD)(2)(g) of this rule, the leaking equipment shall be repaired as soon as practicable, but no later than fifteen calendar days after the leak is detected, except for a delay of repair as provided in paragraph (DD)(11) of this rule. Leaking equipment shall be deemed repaired if the maximum concentration measured pursuant to paragraph (DD)(2)(b)(iv) of this rule is less than ten thousand ppmv.

(j) When a leak is detected as described in paragraph (DD)(2)(g) of this rule, a first attempt at repair shall be made no later than five calendar days after the leak is detected; and the first attempts at repair shall include, but are not limited to, the following best practices where practicable:

(i) Tightening of bonnet bolts;

(ii) Replacement of bonnet bolts;

(iii) Tightening of packing gland nuts; and

(iv) Injection of lubricant into lubricated packing.

(k) When a leak is detected as described in paragraph (DD)(2)(g) of this rule, the following information shall be recorded in a leak repair log:

(i) The identification number of the leaking equipment and, for leaks based on monitoring, the identification numbers of the leak detection instrument and its operator;

(ii) The basis for the detection of the leak; for example, monitoring, visual inspection, or sensor;

(iii) The date on which the leak was detected and the date of each attempt to repair the leaking equipment;

(iv) The methods of repair applied in each attempt to repair the leaking equipment;

(v) One of the following entries within five working days after each attempt to repair the leaking equipment:

(a) "Not monitored," denoting the leaking equipment was presumed to still be leaking and it was not monitored; or

(b) If the leaking equipment was monitored with a leak detection instrument, the maximum concentration that was measured as follows:

(i) The actual reading in ppmv; or

(ii) "Below 10,000," denoting less than ten thousand ppmv; or

(iii) "Above 10,000," denoting not less than ten thousand ppmv;

(vi) If the leak is not repaired within fifteen calendar days after the date on which it was detected:

(a) "Repair delayed" and the reason for the delay;

(b) If repair is being delayed until the next process unit shutdown due to technical infeasibility of repair, the signature of the owner or operator whose decision it was that repair is technically infeasible without a process unit shutdown;

(c) The expected date of successful repair of the leak;

(d) The dates of process unit shutdowns that occur while the leaking equipment is unrepaired; and

(vii) The date on which the leak was successfully repaired.

(l) The leak repair log shall be retained by the owner or operator of the process unit in a readily accessible location for a minimum of two years after the date on which the record was made.

(m) Semiannual reports shall be submitted to the director by the first day of February and August and shall include the following information for the preceding semiannual periods:

(i) The process unit identification;

(ii) The number of pumps in light liquid service excluding those pumps designated for no detectable emissions under the provision of paragraph (DD)(2)(d)(i) of this rule and those pumps complying with paragraph (DD)(2)(d)(iii) of this rule;

(iii) The number of valves in gas/vapor service or in light liquid service excluding those valves designated for no detectable emission under the provision of paragraph (DD)(2)(d)(iv) of this rule and those valves subject to the alternative standard for monitoring under the provision of paragraph (DD)(2)(d)(v) of this rule;

(iv) The number of compressors excluding those compressors designated for no detectable emissions under the provision of paragraph (DD)(3)(c) of this rule and those compressors complying with paragraph (DD)(3)(d) or (DD)(3)(e) of this rule;

(v) For each month during the semiannual period:

(a) The number of pumps in light liquid service for which leaks were detected as described in paragraph (DD)(2)(g) of this rule;

(b) The number of pumps in light liquid service for which leaks were not repaired within fifteen calendar days after the date of leak detection;

(c) The number of valves in gas/vapor service or in light liquid service for which leaks were detected as described in paragraph (DD)(2)(g) of this rule;

(d) The number of valves in gas/vapor service or in light liquid service for which leaks were not repaired within fifteen calendar days after the date of leak detection;

(e) The number of compressors for which leaks were detected as described in paragraph (DD) of this rule;

(f) The number of compressors for which leaks were not repaired within fifteen calendar days after the date of leak detection; and

(g) The facts that explain each delay of repair allowed pursuant to paragraph (DD)(11) of this rule; and

(vi) The dates of process unit shutdowns that occurred within the semiannual period.

(3) Compressors.

(a) Except as otherwise provided in paragraphs (DD)(3)(c) to (DD)(3)(e) of this rule, any compressor in the process unit shall comply with the requirements specified in paragraph (DD)(3)(b) of this rule.

(b) The compressor shall be equipped with a seal that has a barrier fluid system and sensor which comply with the requirements specified in paragraph (DD)(8) of this rule.

(c) Excluded from the requirements of paragraph (DD)(3)(b) of this rule is any compressor that is designated for no detectable emissions as provided in paragraph (DD)(7) of this rule.

(d) Excluded from the requirements of paragraph (DD)(3)(b) of this rule is any compressor that is equipped with a closed vent system capable of capturing and transporting any leakage from the compressor seal to control equipment, provided the closed vent system and the control equipment comply with the requirements specified in paragraphs (DD)(9) and (DD)(10) of this rule.

(e) Excluded from the requirements of paragraph (DD)(3)(b) of this rule is any reciprocating compressor that meets the following conditions:

(i) The compressor was installed prior to May 9, 1986; and

(ii) The owner or operator of the compressor demonstrates to the satisfaction of the director that recasting the compressor distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the requirements of paragraph (DD)(3)(b) of this rule.

(4) Pressure relief devices in gas/vapor service.

(a) Except as otherwise provided in paragraph (DD)(4)(e) of this rule, any pressure relief device in gas/vapor service in the process unit shall comply with the requirements specified in paragraphs (DD)(4)(b) to (DD)(4)(d) of this rule.

(b) Except during pressure releases, the pressure relief device shall be operated with no detectable emissions, as indicated by an instrument reading of less than five hundred ppmv above background, as measured by the method specified in paragraph (F) of rule 3745-21-10 of the Administrative Code.

(c) No later than five calendar days after a pressure release, the pressure relief device shall be tested to confirm the condition of no detectable emissions in accordance with the method specified in paragraph (F) of rule 3745-21-10 of the Administrative Code.

(d) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions as soon as practicable, but no later than five calendar days after the pressure release, except for a delay of repair as provided in paragraph (DD)(11) of this rule.

(e) Excluded from the requirements of paragraphs (DD)(4)(b) to (DD)(4)(d) of this rule is any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to control equipment, provided the closed vent system and control equipment comply with the requirements specified in paragraphs (DD)(9) and (DD)(10) of this rule.

(5) Sampling connection system.

(a) Except as otherwise provided in paragraph (DD)(5)(c) of this rule, any sampling connection system in the process unit shall comply with the requirements specified in paragraph (DD)(5)(b) of this rule.

(b) The sampling connection system shall be equipped with a closed purge system or a closed vent system that meets one of the following requirements:

(i) The purged process fluid is returned directly to the process line with zero VOC emissions to the ambient air;

(ii) The purged process fluid is collected and recycled with zero VOC emissions to the ambient air; or

(iii) The closed purge system or closed vent system is designed and operated to capture and transport all the purged process fluid to control equipment that meet the requirements specified in paragraph (DD)(10) of this rule.

(c) Excluded from the requirements of paragraph (DD)(5)(b) of this rule is any sampling connection system that is an in-situ sampling system.

(6) Open-ended valves or lines.

(a) Any open-ended valve or line in the process unit shall be equipped with a cap, blind flange, plug, or second valve and shall comply with the requirements specified in paragraphs (DD)(6)(b) to (DD)(6)(d) of this rule.

(b) Except during operations requiring the flow of process fluid through the open-ended valve or line, the cap, blind flange, plug, or second valve shall seal the open end of the open-ended valve or line.

(c) If equipped with a second valve, the open-ended valve or line shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(d) If a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves, but shall comply with paragraph (DD)(6)(b) of this rule at all other times.

(7) Equipment designated for no detectable emissions.

(a) Any equipment (pump, valve, or compressor) designated for no detectable emissions pursuant to paragraph (DD)(2)(d)(i), (DD)(2)(d)(iv) or (DD)(3)(c) of this rule shall comply with the requirements specified in paragraphs (DD)(7)(b) to (DD)(7)(d) of this rule.

(b) The equipment shall be operated with no detectable emissions as indicated by an instrument reading of less than five hundred ppmv above background as measured by paragraph (F) of rule 3745-21-10 of the Administrative Code.

(c) The equipment shall be tested for compliance with paragraph (DD)(7)(b) of this rule initially upon designation and annually.

(d) The designation of the equipment shall be signed by the owner or operator of the equipment in the log kept pursuant to paragraph (DD)(14)(b) of this rule.

(8) Barrier fluid systems and sensors for pumps and compressors.

(a) When a pump or compressor is equipped with a seal that has a barrier fluid system and sensor which are employed to meet the requirements of paragraph (DD)(2)(d)(ii) or (DD)(3)(a) of this rule, the requirements of paragraphs (DD)(8)(b) to (DD)(8)(d) of this rule shall be met.

(b) The barrier fluid system shall meet one of the following conditions:

(i) The barrier fluid system is operated with a barrier fluid at a pressure that is at all times greater than the stuffing box pressure of the pump or compressor.

(ii) The barrier fluid system is equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to control equipment and the closed vent system and control equipment comply with the requirements specified in paragraphs (DD)(9) and (DD)(10) of this rule.

(iii) The barrier fluid system is equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the ambient air.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) The barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both based on criteria determined by the owner or operator from design considerations and operating experience.

(9) Closed vent systems.

(a) Any closed vent system that is used to comply with the requirements of paragraph (DD)(2)(d)(iii), (DD)(3)(d), (DD)(4)(e), or (DD)(8)(b)(ii) of this rule shall comply with the requirements specified in paragraphs (DD)(9)(b) to (DD)(9)(d) of this rule.

(b) The closed vent system shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than five hundred ppmv above background, as measured by the method specified in paragraph (F) of rule 3745-21-10 of the Administrative Code.

(c) The closed vent system shall be tested for compliance with paragraph (DD)(9)(b) of this rule initially and annually.

(d) The closed vent system shall be operated at all times when emissions may be vented to it.

(10) Control equipment.

(a) Any control equipment that is used to comply with the requirements of paragraph (DD)(2)(d)(iii), (DD)(3)(d), (DD)(4)(e), (DD)(5)(b)(iii), (DD)(8)(b)(ii), or (DD)(11)(d)(ii) of this rule shall comply with the requirements specified in paragraphs (DD)(10)(b) to (DD)(10)(f) of this rule.

(b) If the control equipment is a vapor recovery system, it shall be designed and operated to recover VOC emissions vented to it with an efficiency of at least ninety-five per cent by weight.

(c) If the control equipment is an enclosed combustion device, it shall be designed and operated to reduce the VOC emissions vented to it with an efficiency of at least ninety-five per cent by weight, or to provide a minimum residence time of 0.75 second at a minimum temperature of fifteen hundred degrees Fahrenheit.

(d) If the control equipment is a flare, it shall meet the following requirements:

(i) The flare shall be designed for and operated with no visible emissions as determined by "Method 22, 40 CFR, Part 60, Appendix A," except for periods not to exceed a total of five minutes during any one hundred twenty consecutive minutes.

(ii) The flare shall be operated with either an electric arc ignition system or a pilot flame. If a pilot flame is employed, the flame shall be present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame. If an electric arc ignition system is employed, the arcing shall pulse continually and shall be monitored to detect any failure.

(iii) The flare shall be steam-assisted, air-assisted or nonassisted.

(iv) The net heating value of the gas being combusted in the flare, as determined by the method specified in paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be three hundred

Btu/scf or greater if the flare is steam-assisted or air-assisted, or shall be two hundred Btu/scf or greater if the flare is nonassisted.

(v) Except as provided in paragraph (DD)(10)(d)(vi) of this rule, the flare shall be designed and operated with an actual exit velocity, as determined by the method specified in paragraph (P)(3) of rule 3745-21-10 of the Administrative Code, less than sixty feet per second if the flare is steam-assisted or nonassisted, or less than the maximum permitted velocity, as determined in paragraph (P)(4) of rule 3745-21-10 of the Administrative Code, if the flare is air-assisted.

(vi) Excluded from the requirements of paragraph (DD)(10)(d)(v) of this rule is any steam-assisted or nonassisted flare that meets both of the following requirements:

(a) The net heating value of the gas being combusted in the flare, as determined by the method specified in paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be greater than one thousand Btu/scf.

(b) The flare shall be designed and operated with an actual exit velocity, as determined by the method specified in paragraph (P)(3) of rule 3745-21-10 of the Administrative Code, less than four hundred feet per second.

(e) The owner or operator of the control equipment shall monitor the control equipment to ensure that it is operated and maintained in conformance with its design.

(f) The control equipment shall be operated at all times when emissions may be vented to it.

(11) Delay of repair.

(a) A delay of repair that is employed pursuant to paragraph (DD)(2)(i) or (DD)(4)(d) of this rule shall be allowed only as provided in paragraphs (DD)(11)(b) to (DD)(11)(f) of this rule.

(b) A delay of repair shall be allowed if the repair is technically infeasible without a process unit shutdown. However, the repair shall occur before the end of the next process unit shutdown.

(c) A delay of repair shall be allowed for a piece of equipment that is isolated from the process and that does not remain in VOC service (for example, isolated from the process and properly purged).

(d) A delay of repair for a valve shall be allowed if:

(i) The owner or operator of the valve demonstrates that the emission of purged material resulting from immediate repair is greater than the emission likely to result from delay of repair; and

(ii) When repair procedures are effected, the purged material is collected and destroyed or recovered in control equipment that meets the requirements specified in paragraph (DD)(10) of this rule.

(e) A delay of repair for a pump shall be allowed if:

(i) The repair requires the use of a dual mechanical seal system and associated barrier fluid system; and

(ii) The repair is completed as soon as practicable, but no later than six months after the leak was detected.

(f) A delay of repair beyond a process unit shutdown shall be allowed for a valve if a valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. A delay of repair beyond the next process unit shutdown shall not be allowed for that valve unless the next process unit shutdown occurs sooner than six months after the first process unit shutdown.

(12) Alternative monitoring schedule for valves based on a skip period.

(a) Any owner or operator of a process unit may elect to implement an alternative monitoring schedule in lieu of the monitoring requirements specified in paragraph (DD)(2)(b)(ii) of this rule, as provided in paragraph (DD)(2)(c)(iii) of this rule. The alternative monitoring schedule shall be based on skipping quarterly monitoring periods provided the percentage of valves leaking is no more than 2.0. Any owner or operator who elects to implement an alternative monitoring schedule shall comply with the requirements specified in paragraphs (DD)(12)(b) to (DD)(12)(h) of this rule.

(b) The owner or operator must notify the director prior to implementing this alternative monitoring schedule. Such notification must identify which valves will be subject to this alternative monitoring schedule and which work practice within paragraph (DD)(12)(e) of this rule will be implemented. Any valve in vacuum service, in heavy liquid service, or not in VOC service, shall be excluded from this alternative monitoring schedule.

(c) Any valve subject to this alternative monitoring schedule shall comply initially with the monitoring requirements specified in paragraph (DD)(2)(b)(ii) of this rule.

(d) Any valve subject to this alternative monitoring schedule shall continue to be subject to the requirements specified in paragraphs (DD)(2)(g) to (DD)(2)(m) of this rule.

(e) One of the following two alternative work practices for skipping monitoring periods may be implemented:

(i) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, a monitoring program may begin in which the first quarter of every two consecutive quarterly leak detection periods is skipped.

(ii) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, a monitoring program may begin in which the first three quarters of every four consecutive quarterly periods is skipped.

(f) If the percentage of valves leaking is greater than 2.0, the owner or operator shall comply with the monitoring requirements as specified in paragraph (DD)(2)(b)(ii) of this rule, but may again elect to use this alternative monitoring schedule.

(g) The percentage of valves leaking shall be determined for the valves subject to this alternative monitoring schedule as the sum of the number of those valves found leaking during any portion of the current monitoring period and the number of those valves found leaking during a previous monitoring period for which repair has been delayed during the current monitoring period, divided by the total number of valves, and multiplied by one hundred.

(h) The following information pertaining to valves subject to this alternative monitoring schedule shall be recorded in a log that is kept in a readily accessible location:

(i) A schedule of monitoring; and

(ii) The percentage of valves leaking during each monitoring period.

(13) Alternative monitoring standard for valves based on the allowable percentage of valves leaking.

(a) Any owner or operator of a process unit may elect to implement an alternative monitoring standard in lieu of the monitoring requirements specified in paragraph (DD)(2)(b)(ii) of this rule, as provided in paragraph (DD)(2)(d)(v) of this rule. The alternative monitoring standard shall be based on maintaining the percentage of valves leaking at 2.0 or less. Any owner or operator who elects to implement an alternative monitoring standard shall comply with the requirements specified in paragraphs (DD)(13)(b) to (DD)(13)(g) of this rule.

(b) The owner or operator must notify the director prior to implementing this alternative monitoring standard.

(c) All valves in gas/vapor service or in light liquid service in the process unit shall be subject to this alternative monitoring standard, except for those valves which are designated as unsafe to monitor as provided

in paragraph (DD)(2)(c)(ii) of this rule, those valves not in VOC service, and those valves in vacuum service.

(d) The percentage of valves leaking, as determined in accordance with paragraph (DD)(13)(f) of this rule, shall not exceed 2.0. If the percentage of valves leaking is greater than 2.0, the owner or operator shall comply with the monitoring requirements as specified in paragraph (DD)(2)(b)(ii) of this rule, but may again elect to use this alternative monitoring standard.

(e) All valves subject to this alternative monitoring standard shall be tested for compliance with paragraph (DD)(13)(d) of this rule initially upon implementation and annually.

(f) A compliance test shall be conducted in the following manner:

(i) All valves subject to this alternative monitoring standard shall be monitored for leaks within a one-week period by the method specified in paragraph (F) of rule 3745-21-10 of the Administrative Code.

(ii) If an instrument reading of ten thousand ppmv or greater is measured, a leak is detected.

(iii) The percentage of valves leaking shall be determined as the number of valves for which a leak is detected, divided by the number of valves monitored, and multiplied by one hundred.

(g) When a leak is detected as described in paragraph (DD)(13)(f)(ii) of this rule, the leaking valve shall be repaired in accordance with paragraphs (DD)(2)(h) and (DD)(2)(i) of this rule.

(14) Recordkeeping.

(a) Each owner or operator of a process unit as described in paragraph (DD)(1) of this rule shall comply with the recordkeeping requirements of paragraphs (DD)(14)(b) to (DD)(14)(g) of this rule. An owner or operator of more than one process unit may use one recordkeeping system to comply with the recordkeeping requirements, provided the system identifies each record by each process unit.

(b) The following information shall be recorded in a log that is kept in a readily accessible location:

(i) A list of identification numbers for equipment subject to the requirements of paragraphs (DD)(2) to (DD)(10) of this rule;

(ii) A list of identification numbers for equipment designated for no detectable emissions as provided in paragraph (DD)(7) of this rule, and a signature of the owner or operator authorizing such designation;

(iii) A list of identification numbers for pressure relief devices subject to paragraph (DD)(4) of this rule;

(iv) A list of identification numbers for closed vent systems subject to paragraph (DD)(9) of this rule; and

(v) For compliance tests required under paragraphs (DD)(4)(c), (DD)(7)(c), and (DD)(9)(c) of this rule:

(a) The date of each compliance test;

(b) The background level measured during each compliance test; and

(c) The maximum instrument reading measured at the equipment during each compliance test.

(c) The following information pertaining to valves subject to an alternative monitoring schedule, as provided in paragraph (DD)(2)(c) of this rule, shall be recorded in a log that is kept in a readily accessible location:

(i) A list of identification numbers for valves designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve;

(ii) A list of identification numbers for valves designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the schedule for monitoring each valve; and

(iii) A list of identification numbers for valves subject to the alternative monitoring schedule based on a skip period, a schedule for monitoring, and the percentage of valves leaking during each monitoring period.

(d) The following information pertaining to closed vent systems and control equipment described in paragraphs (DD)(9) and (DD)(10) of this rule shall be recorded and kept in a readily accessible location:

(i) Detailed schematics, design specifications, and piping and instrumentation diagrams;

(ii) The dates and descriptions of any changes in the design specifications;

(iii) A description of the parameter or parameters monitored, as required in paragraph (DD)(10)(d) of this rule, to ensure that the control equipment is operated and maintained in conformance with its design, and an explanation of the reason for selecting such parameter or parameters;

(iv) Periods when the closed vent systems and control equipment are not operated as designed, including periods when a flare pilot light does not have a flame; and

(v) Dates of startups and shutdowns of the closed vent systems and control equipment.

(e) The following information pertaining to barrier fluid systems and sensors described in paragraph (DD)(8) of this rule shall be recorded in a log that is kept in a readily accessible location:

(i) A list of identification numbers of pumps and compressors equipped with such barrier fluid systems and sensors;

(ii) The criteria that indicate failure of the seal system, the barrier fluid system, or both, as required in paragraph (DD)(8)(d) of this rule and an explanation of the criteria; and

(iii) Any changes to such criteria and the reasons for the changes.

(f) The following information for use in determining an exemption for the process unit as provided in paragraph (DD)(17)(a) of this rule shall be recorded in a log that is kept in a readily accessible location:

(i) An analysis demonstrating the design capacity of the process unit;

(ii) A statement listing the feed and raw materials and products from the process unit and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohols; or

(iii) An analysis demonstrating that no equipment is in VOC service.

(g) The following information pertaining to specific equipment that are exempt as provided in paragraph (DD)(17)(b) of this rule shall be recorded in a log that is kept in a readily accessible location:

(i) A list of identification numbers of equipment in vacuum service;

(ii) A list of identification numbers of equipment not in VOC service and the information or data used to demonstrate that the equipment is not in VOC service; and

(iii) A list of equipment subject to an equivalent emission requirement that is approved by the director pursuant to paragraph (DD)(16) of this rule.

(15) Reporting.

(a) Each owner or operator of a process unit as described in paragraph (DD)(1) of this rule shall comply with the reporting requirements specified in paragraphs (DD)(15)(b) to (DD)(15)(d) of this rule.

(b) For compliance tests required under paragraphs (DD)(7)(c) and (DD)(9)(c) of this rule, the requirements of paragraphs (A)(3) and (A)(4) of rule 3745-21-10 of the Administrative Code (pertaining to notification of intent to test) shall be met. The results of such compliance tests shall be reported to the Ohio environmental protection agency district office or delegate agency within thirty days after the test date.

(c) The results of compliance tests required under paragraph (DD)(4)(c) of this rule shall be reported semiannually to the Ohio environmental protection agency district office or delegate agency. The semiannual reports shall be submitted by the first day of February and August and shall include information for the preceding semiannual period.

(d) Any semiannual reports required under paragraph (DD)(2)(m) of this rule may be sent to the Ohio environmental protection agency district office or delegate agency.

(16) Equivalent requirement.

(a) Any owner or operator of a process unit may apply to the director for determination of an equivalent requirement in lieu of the requirements specified in paragraphs (DD)(2)to (DD)(10) of this rule. The determination of equivalence will be evaluated by the guidelines specified in paragraphs (DD)(16)(b) to (DD)(16)(d) of this rule. If the director approves an equivalent requirement for a process unit, said requirement shall be specified in the special terms and conditions of the permit to operate or variance issued by the director for the process unit.

(b) The owner or operator applying for a determination of equivalency shall be responsible for collecting and verifying test data to demonstrate the proposed equivalence.

(c) The equivalent requirement shall achieve a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC that would be achieved by compliance with the applicable requirements of paragraph (DD) of this rule.

(d) The director may condition the approval of equivalence as necessary to ensure the same emission reduction as the applicable requirements of paragraph (DD) of this rule.

(17) Exemptions.

(a) Exempted from the requirements of paragraphs (DD)(2) to (DD)(6) of this rule are the following process units:

(i) Any process unit that has a design capacity to produce less than one thousand one hundred tons per year;

(ii) Any process unit that produces only heavy liquid chemicals from heavy liquid feed or raw materials;

(iii) Any process unit that produces beverage alcohol;

(iv) Any process unit that has no equipment in VOC service as determined in accordance with paragraph (O)(2) of rule 3745-21-10 of the Administrative Code; and

(v) Any process unit at a petroleum refinery, as defined in paragraph (E)(15) of rule 3745-21-01 of the Administrative Code.

(b) Exempted from the requirements of paragraphs (DD)(2) to (DD)(6) of this rule are the following equipment:

(i) Any equipment not in VOC service, as determined in accordance with paragraph (O)(2) of rule 3745-21-10 of the Administrative Code;

(ii) Any equipment in vacuum service; and

(iii) Any equipment subject to an equivalent emission limitation as provided in paragraph (DD)(16) of this rule.

5. This facility developed and registered a risk management plan pursuant to section 112(r) of the Act and, therefore, is subject to Section 112(r) of the Act.

6. Emissions unit P101 (formaldehyde manufacturing process) is currently inactive and, therefore, is not included in this Title V operating permit. If the emissions unit remains shut down for more than 2 years, before the permittee recommences operation, the permittee may be required to comply with all federal and Ohio EPA new source review requirements and federal New Source Performance Standards that are applicable, and demonstrate compliance with all applicable emission limitations and control requirements by performing emission testing in accordance with the approved U.S. EPA methods and procedures. The permittee shall notify the Toledo Division of Environmental Services at least 60 days prior to recommencing operation of the emissions unit.

7. The following insignificant emissions units are located at this facility:

   T002 - caustic tank (PTI 04-479);
   T003 - butyraldehyde tank (PTI 04-479);
   T007 - caustic tank (PTI 04-479);
   T008 - butyraldehyde tank (PTI 04-479);
   T018 - reactor product tank (PTI 04-918); and
   T019 - neopentylglycol tank (PTI 04-930).

   Each insignificant emissions unit at this facility must comply with all applicable State and federal regulations, as well as any emission limitations and/or control requirements contained within the identified permit to install for the emissions unit. Insignificant emissions units listed above that are not subject to specific permit to install requirements are subject to one or more applicable requirements contained in the SIP-approved versions of OAC Chapters 3745-17, 3745-18, and 3745-21.

B. State Only Enforceable Section

1. The following insignificant emissions units located at this facility are exempt from permit requirements because they are not subject to any applicable requirements or because they meet the "de minimis" criteria established in OAC rule 3745-15-05:

   Z020 - acetaldehyde tank; and
   Z021 - acetaldehyde tank.

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Boiler (B001)
Activity Description: Boiler - Combustion Engineering Model 21A13

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
85 mmBtu/hr natural gas/ methanol/#2 fuel oil-fired boiler, no controls	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-10(B)(1)	0.020 pound of particulate emissions per mmBtu of actual heat input
	OAC rule 3745-18-06(A)	See section A.I.2.a below.
	OAC rule 3745-18-06(D)	See section A.I.2.b below.
	OAC rule 3745-21-08(B)	See section A.I.2.e below.
	OAC rule 3745-23-06(B)	See section A.I.2.c below.
	40 CFR 52.1881(b)(21)(ii)	1.00 pound of sulfur dioxide per mmBtu of actual heat input when fired with #2 fuel oil. See section A.I.2.d below.

2. Additional Terms and Conditions

2.a When firing natural gas only: OAC rule 3745-18-06(A) does not establish SO2 emission limitations for the fuel burning equipment associated with this emissions unit because the emissions unit only employs natural gas as fuel. However, OAC rule 3745-18-06(A) requires that the natural gas being combusted meet certain fuel quality restrictions (a heat content greater than 950 Btu per standard cubic foot and a sulfur content less than 0.6 pound per million standard cubic feet). Because the natural gas being burned in this emissions unit is the standard, pipeline quality natural gas supplied to industrial, commercial, and residential users throughout the State, it is assumed that it meets the fuel quality restrictions; and no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance with OAC rule 3745-18-06(A).

2.b When firing fuel oil: The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR 52.1881(b)(21)(ii).

2.c The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.

2.d The quality of the #2 fuel oil burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitation specified in section A.I.1 above.

2.e The design of the emissions unit and the technology associated with the current operating practices will satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

II. Operational Restrictions

1. The permittee shall burn only natural gas, methanol or #2 fuel oil in this emissions unit.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the #2 fuel oil burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

a. Alternative 1:

For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).) A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of oil that is burned in this emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to develop a composite sample representative of the fuel oil burned in this emissions unit. A representative grab sample of oil does not need to be collected on days when this emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of test-firing, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu).

2. The permittee shall perform or require the supplier to perform the analyses for the sulfur content and heat content of the #2 fuel oil in accordance with ASTM methods D240, D4294, D6010, or equivalent methods as approved by the Toledo Division of Environmental Services.

3. For each day during which the permittee fires #2 fuel oil in this emissions unit, the permittee shall maintain the following records:

a. the quantity and sulfur content of #2 fuel oil burned in the emissions unit;

b. the hours of operation when burning #2 fuel oil; and

c. the calculated sulfur dioxide emission rate in lbs/mmBtu (average), from this emissions unit.

4. For each day during which the permittee burns a fuel other than natural gas, methanol or #2 fuel oil in this emissions unit, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

5. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

   a. the color of the emissions;
   b. whether the emissions are representative of normal operations;
   c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
   d. the total duration of any visible emission incident; and
   e. any corrective actions taken to eliminate the visible emissions.

   If the daily checks show no visible emissions for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when the emissions unit is in operation). If a subsequent check by the permittee or an Ohio EPA inspector indicates visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of no visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all shipments of #2 fuel oil used to fire this emissions unit (for alternative 1), and/or all daily grab samples of the oil (for alternative 2), that are in excess of the calculated sulfur dioxide emission limitation of 1.0 lb/mmBtu of actual heat input.

2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Toledo Division of Environmental Services by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas, methanol and/or #2 fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

4. The deviation (excursion) reports shall be submitted in accordance with section A.1.c of the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

20% opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and in OAC rule 3745-17-03(B)(1).

1.b Emission Limitation:

0.020 pound of particulate emissions per million Btu of actual heat input

Applicable Compliance Method:

Compliance shall be based upon an emission factor of 1.9 pounds of particulate emissions per million standard cubic feet of natural gas, when firing natural gas, 2.0 pounds of particulate emissions per one thousand gallons of fuel oil, when firing fuel oil. These emission factors are specified in Tables 1.4-2 and 1.3-1 of USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 7/98. Compliance while firing methanol shall be based upon the results of the most recent stack test which demonstrated compliance with the emissions limitation. If required, compliance shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and in OAC rule 3745-17-03(B)(9).

1.c Emission Limitation:

1.00 pound of sulfur dioxide per mmBtu of actual heat input when firing with #2 fuel oil

Applicable Compliance Method:

When firing with #2 fuel oil, compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the monitoring and record keeping requirements of sections A.III.1 through A.III.3 of this permit. If required, compliance shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 6.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Boiler (B101)

Activity Description: Superior Scotch Marine Boiler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
21 mmBtu/hr natural gas-fired boiler with no controls	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-10(B)(1)	0.020 pound of particulate emissions per mmBtu of actual heat input.
	OAC rule 3745-18-06(A)	See section A.I.2.a below.
	OAC rule 3745-21-08(B)	See section A.I.2.b below.
	OAC rule 3745-23-06(B)	See section A.I.2.c below.

2. Additional Terms and Conditions

2.a OAC rule 3745-18-06(A) does not establish SO2 emission limitations for the fuel burning equipment associated with this emissions unit because the emissions unit only employs natural gas as fuel. However, OAC rule 3745-18-06(A) requires that the natural gas being combusted meet certain fuel quality restrictions (a heat content greater than 950 Btu per standard cubic foot and a sulfur content less than 0.6 pound per million standard cubic feet). Because the natural gas being burned in this emissions unit is the standard, pipeline quality natural gas supplied to industrial, commercial, and residential users throughout the State, it is assumed that it meets the fuel quality restrictions; and no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance with OAC rule 3745-18-06(A).

2.b The design of the emissions unit and the technology associated with the current operating practices will satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.c The design of the emissions unit and the technology associated with the current operating practices will satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emission unit.

III. Monitoring and/or Record keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas in this emissions unit, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

20% opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and in OAC rule 3745-17-03(B)(1).

1.b Emission Limitation:

0.020 pound of particulate matter per mmBtu of actual heat input

Applicable Compliance Method:

Compliance shall be based upon an emission factor of 1.9 pounds of particulate emissions per million standard cubic feet of natural gas, a heating value of 1020 Btus per standard cubic foot of natural gas. This emission factor is specified in Table 1.4-2 of USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 7/98. If required, compliance shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and in OAC rule 3745-17-03(B)(9).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Formate Handling (P004)

Activity Description: Sodium Formate Handling Equipment

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
material handling including sodium formate drying and sodium formate bagging controlled by a rotoclone and wet scrubber	OAC rule 3745-31-05(A)(3) (PTI 04-1123)	Visible particulate emissions shall not exceed 5% opacity as a 3-minute average.
		0.48 lb/hr of particulate emissions
		2.1 tpy of particulate emissions
	OAC rule 3745-17-07(A)(1)	This emission limitation is less stringent than that established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(A)(2)	This emission limitation is less stringent than that established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The pressure drop across the scrubber shall be continuously maintained at a value of not less than the minimum static pressure drop (in inches of water) established during the most recent emission test that demonstrated that the emissions unit was in compliance while the emissions unit is in operation.

2. The scrubber water flow rate shall be continuously maintained at a value of not less than the minimum water flow rate (in gallons per minute) established during the most recent emission test that demonstrated that the emissions unit was in compliance while the emissions unit is in operation.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

2. The permittee shall collect and record the following information :

a. the pressure drop across the scrubber, in inches of water, on a once/day basis;

b. the scrubber water flow rate, in gallons per minute, on a once/day basis; and

c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit each day.

3. The permittee shall maintain monthly records of the hours of operation of this emissions unit as a rolling, 12-month summation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the levels determined in accordance with section A.II.1 and A.II.2 of these terms and conditions:

a. the static pressure drop across the scrubber; and

b. the scrubber water flow rate.

2. The quarterly deviation (excursion) reports shall be submitted in accordance with section A.1.c of the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

5% opacity as a 3-minute average

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

1.b Emission Limitation:

0.48 lb/hr of particulate emissions

Applicable Compliance Method:

If required, compliance shall be determined in accordance with methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and in OAC rule 3745-17-03(B)(9).

1.c Emission Limitation:

2.1 tpy of particulate emissions

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the particulate emission rate in pounds per hour, determined during the most recent emission test which demonstrated compliance with the particulate emission limitation, by the annual hours of operation for this emissions unit and dividing by 2,000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: TMP and Formate Mfg. (P801)

Activity Description: Manufacture of Trimethylolpropane and Sodium Formate

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
trimethylolpropane (TMP) and sodium formate manufacturing process including reactors, evaporators, coolers, crystallizers and distillation equipment controlled by catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-949)	Process emissions: 0.70 lb/hr of VOC, including formaldehyde 3.07 tpy of VOC including formaldehyde 0.11 lb/hr of formaldehyde 0.48 tpy of formaldehyde 2.5 tpy of VOC (fugitive) See section A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(G)(2), (G)(6)(a)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-09(DD)	See section A.I.2.c below.
	40 CFR Part 60, Subpart VV	See section A.I.2.d below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.e below.

2. Additional Terms and Conditions

2.a The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-09(DD) and 40 CFR Part 60, Subpart VV, and 40 CFR Part 63, Subparts G and H.

2.b The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% by weight destruction efficiency.

2.c i. The permittee shall implement a volatile organic compound (VOC) leak detection and repair program consistent with the applicable Sections of OAC rule 3745-21-09(DD)(2). Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of OAC rule 3745-21-09(DD). Compliance with OAC rule 3745-21-09(DD)(2) for sources affected by Subpart H may be demonstrated by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of Subpart H.

ii. The permittee may elect to comply with the VOC leak detection and repair program requirements of OAC rule 3745-21-09(DD) by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart H for all VOC process equipment leaks.

2.d i. The permittee shall implement a volatile organic compound (VOC) leak detection and repair program consistent with the applicable Sections of 40 CFR Part 60, Subpart VV. Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 60, Subpart VV. Compliance with 40 CFR Part 60, Subpart VV for sources affected by Subpart H may be demonstrated by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of Subpart H.

ii. The permittee may elect to comply with the VOC leak detection and repair program requirements of 40 CFR Part 60, Subpart VV by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart H for all VOC process equipment leaks.

2.e Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

2.f The combined emissions from emissions units P801, T004 and T006 shall not exceed 3.07 tons of VOC per year.

II. Operational Restrictions

1. The maximum hourly production rates for this emissions unit shall not exceed those included in the permit to install application for PTI 04-1123.

2. The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain monthly records of the pounds of TMP and the pounds of sodium formate produced in this emissions unit, the hours of operation of this emissions unit for each product, and the average hourly production rate for each product.

2. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

4. The permittee shall keep a monthly record of the hours of operation for this emissions unit.

5. For purposes of compliance with OAC rule 3745-21-09(DD), the permittee shall maintain monthly records that document the following:

a. The process unit identification;

b. The number of pumps in light liquid service excluding those pumps designated for no detectable emissions under the provision of paragraph (DD)(2)(d)(i) of this rule and those pumps complying with paragraph (DD)(2)(d)(iii) of this rule;

c. The number of valves in gas/vapor service or in light liquid service excluding those valves designated for no detectable emission under the provision of paragraph (DD)(2)(d)(iv) of this rule and those valves subject to the alternative standard for monitoring under the provision of paragraph (DD)(2)(d)(v) of this rule;

d. The number of compressors excluding those compressors designated for no detectable emission under the provision of paragraph (DD)(3)(c) of this rule and those compressors complying with paragraph (DD)(3)(d) or (DD)(3)(e) of this rule;

e. The number of pumps in light liquid service for which leaks were detected as described in paragraph (DD)(2)(g) of this rule;

f. The number of pumps in light liquid service for which leaks were not repaired within fifteen calendar days after the date of leak detection;

g. The number of valves in gas/vapor service or in light liquid service for which leaks were detected as described in paragraph (DD)(2)(g) of this rule;

h. The number of valves in gas/vapor service or in light liquid service for which leaks were not repaired within fifteen calendar days after the date of leak detection;

i. The number of compressors for which leaks were detected as described in paragraph (DD) of this rule;

j. The number of compressors for which leaks were not repaired within fifteen calendar days after the date of leak detection; and

k. The facts that explain each delay of repair allowed pursuant to paragraph (DD)(11) of this rule; and

l. The dates of process unit shutdowns that occurred.

Note: If the permittee elects to comply with the monitoring and record keeping requirements of 40 CFR Part 63, Subpart H, as described in Part II of this permit, for all VOC sources as permitted in of this permit, the monitoring and record keeping requirements of 40 CFR Part 63, Subpart H shall supersede the monitoring and record keeping requirements of Section 5. above.

6. The monitoring and record keeping requirements of 40 CFR Part 63, Subparts G and H, as described in Part II of this permit, supersede the monitoring and record keeping requirements established by PTI 04-949 for all affected sources.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, based upon the records required in section A.III.1, that identify all exceedences of the TMP and sodium formate production rate limitations, as well as the corrective actions that were taken to achieve compliance.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

3. The permittee shall submit semiannual reports by the first day of February and August of each year, containing monthly summations of the information collected in Section A.III.5. during the preceding semiannual periods.

Note: If the permittee elects to comply with the reporting requirements of 40 CFR Part 63, Subpart H, as described in Part II of this permit, for all VOC sources as permitted in Section A.I.2.c.ii. of this permit, the reporting requirements of 40 CFR Part 63, Subparts G and H shall supersede the reporting requirement above.

4. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

5. The reporting requirements of 40 CFR Part 63, Subparts G and H, as described in Part II of this permit, supersede the reporting requirements of PTI 04-949 for all affected sources.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.70 lb/hr VOC, including formaldehyde

Applicable Compliance Method:

If required Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 18 or 25 and/or 25A of 40 CFR Part 60, Appendix A, and/or Method 0011 of 40 CFR Part 266, Appendix IX. Alternately, any other method or data that has been validated according to the applicable procedures in Method 301 of Appendix A of 40 CFR Part 63, may be used with prior approval from the Ohio EPA.

1.b Emission Limitation:

3.07 tons of VOC per year, including formaldehyde (process)

Applicable Compliance Method:

The permittee shall demonstrate compliance by multiplying the VOC emissions rate including formaldehyde, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the VOC, including formaldehyde, lbs/hr emission limitation, by the annual hours of operation of the equipment and dividing by 2000 pounds per ton.

1.c Emission Limitation:

98% destruction efficiency for VOC, including formaldehyde (process)

Applicable Compliance Method:

The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the procedures specified in 40 CFR Part 63 Subpart G and OAC

rule 3745-21-10(C) and the test methods specified in Method 18 or 25 and/or 25A of 40 CFR Part 60, Appendix A, and/or Method 0011 of 40 CFR Part 266, Appendix IX. Alternately, any other method or data that has been validated according to the applicable procedures in Method 301 of Appendix A of 40 CFR Part 63, may be used with prior approval from the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

1.d Emission Limitation:

0.11 lb/hr of formaldehyde (process)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in Method 0011 of 40 CFR Part 266, Appendix IX. Alternately, any other method or data that has been validated according to the applicable procedures in Method 301 of Appendix A of 40 CFR Part 63, may be used with prior approval from the Ohio EPA.

1.e Emission Limitation:

0.48 tpy of formaldehyde (process)

Applicable Compliance Method:

The permittee shall demonstrate compliance by multiplying the formaldehyde emission rate, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the formaldehyde lb/hr emission limitation, by the annual hours of operation of the equipment, and then dividing by 2,000 pounds per ton.

1.f Emission Limitation:

2.5 tons VOC per year (fugitive)

Applicable Compliance Method:

Compliance shall be demonstrated by using the emission factors from "Control Techniques for Fugitive VOC Emissions from Chemical Process Facilities" EPA/625/R-93/005 March 1994 Table 7-2, or other approved alternate, and the number of pumps, valves, flanges, etc. to calculate the pounds per hour of fugitive VOC emissions. The annual fugitive VOC emissions (in tons VOC per year) shall be calculated by multiplying pounds per hour emission rate by the annual hours of operation of the equipment and dividing by 2000 pounds per ton.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a The emission testing shall be conducted within six months of the expiration date of this permit.

2.b The emission testing shall be conducted to demonstrate compliance with the control efficiency limitation (or discharge concentration) for total organic hazardous air pollutants.

2.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Method 18, 25 and/or 25A of 40 CFR Part 60, Appendix A, and/or Method 0011 of 40 CFR Part 266, Appendix IX. Alternately, any other method or data that has been validated according to the applicable procedures in Method 301 of Appendix A of 40 CFR Part 63, may be used with prior approval from the Ohio EPA.

2.d The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63 Subpart G and OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2.e. The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Toledo Division of Environmental Services.

2.f. Not later than 30 days prior to the proposed test dates, the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the times and dates of the tests, and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Director's refusal to accept the results of the emission tests.

2.g. Personnel from the Toledo Department of Environmental Services shall be permitted to witness the tests, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

2.h. A comprehensive written report on the results of the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the tests. The permittee may request additional time from the Toledo Division of Environmental Services for the submittal of the written report.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: PE and Formate Mfg. (P803)

Activity Description: Manufacture of Pentaerythritol and Formaldehyde

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
pentaerythritol, dipentaerythitol and sodium formate manufacturing process including reactors, evaporators, crystallizers, belt filters, centrifuges, dryers and baggers controlled by a wet scrubber and catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-1232)	1.25 lbs/hr of OC (process) 5.5 tpy OC (process) 4.5 lbs/hr particulate emissions 19.71 tpy of particulate emissions 14.15 tpy VOC (fugitive) See section A.I.2.a below.
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(A)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(2), (G)(6)(a)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	40 CFR Part 63, Subparts G and H	See section A.I.2.b below.
	40 CFR Part 60, Subpart VV	See section A.I.2.c below.
	OAC rule 3745-21-09(DD)	See section A.I.2.d below.

2. Additional Terms and Conditions

2.a The requirements of this rule also include compliance with the requirements of OAC rules 3745-21-09(DD) and 3745-17-07 and 40 CFR Part 60, Subpart VV and Part 63, Subparts G and H.

2.b Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

2.c i. The permittee shall implement a volatile organic compound (VOC) leak detection and repair program consistent with the applicable Sections of 40 CFR Part 60, Subpart VV. Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 60, Subpart VV. Compliance with 40 CFR Part 60, Subpart VV for sources affected by Subpart H may be demonstrated by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of Subpart H.

ii. The permittee may elect to comply with the VOC leak detection and repair program requirements of 40 CFR Part 60, Subpart VV by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart H for all VOC process equipment leaks.

2.d The permittee shall comply with the VOC leak detection and repair program requirements of OAC rule 3745-21-09(DD) by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart H for all VOC process equipment leaks.

II. Operational Restrictions

1. The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

2. The scrubber water flow rate shall be continuously maintained (while the emissions unit is in operation) at a value that is at least 80 percent of the value established during the most recent emission test that demonstrated compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;
b. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. the total duration of any visible emission incident; and
e. any corrective actions taken to eliminate the visible emissions.

2. The permittee shall properly operate and maintain equipment to monitor and record the scrubber water flow rate while the emissions unit is in operation. The monitoring device and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

3. The permittee shall collect and record the following information each day:

a. the scrubber water flow rate in gallons per minute; and
b. a log or record of operating time for capture (collection) system, the scrubber, monitoring equipment and the emissions unit.

4. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator’s catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

5. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

6. The permittee shall maintain monthly records of the hours of operation for this emissions unit as a rolling, 12-month summation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the scrubber water flow rate was not maintained at or above the required levels.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Toledo Division of Environmental Services by January 31 and July 31 of each year and shall cover the previous 6-month period.

5. The permittee shall submit quarterly summaries of the log or record of operating time for the capture (collection) system, the scrubber, monitoring equipment and the emissions unit.

V. Testing Requirements

1. Compliance with the emission limitations of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

1.25 lbs/hr of OC (process)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 18.

1.b Emission Limitation:

5.5 tpy of OC (process)

Applicable Compliance Method:

The permittee shall multiply the OC emission rate, in lbs/hr of OC, determined during the most recent emission test which demonstrated compliance with the OC emissions limitation, by the annual hours of operation for this emissions unit and divide by 2,000 pounds per ton.

1.c Emission Limitation:

4.5 lbs/hr of particulate emissions

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and in OAC rule 3745-27-03(B)(9).

1.d Emission Limitation:

19.71 tpy of particulate emissions

Applicable Compliance Method:

The permittee shall demonstrate compliance by multiplying the particulate emission rate, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the particulate emission limitation, by the annual hours of operation for this emissions unit and divide by 2,000 pounds per ton.

1.e Emission Limitation:

14.15 tons VOC per year (fugitive).

Applicable Compliance Method:

Compliance shall be demonstrated by using the emission factors from "Control Techniques for Fugitive VOC Emissions from Chemical Process Facilities" EPA/625/R-93/005 March 1994 Table 7-2, or other approved alternate, and the number of pumps, valves, flanges, etc. to calculate the pounds per hour of fugitive VOC emissions. The annual fugitive VOC emissions (in tons VOC per year) shall be calculated by multiplying pounds per hour emission rate by the annual hours of operation of the equipment and dividing by 2000 pounds per ton.

1.f Emission Limitation:

20% opacity as a six-minute average

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a. The emission testing shall be conducted within 6 months prior to permit expiration.

2.b. The emission testing shall be conducted to demonstrate compliance with the control efficiency limitation (or discharge concentration) for total organic hazardous air pollutants.

2.c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Method 18, 25 and/or 25A of 40 CFR Part 60, Appendix A. Alternately, any other method or data that has been validated according to the applicable procedures in Method 301 of Appendix A of 40 CFR Part 63, may be used with prior approval from the Ohio EPA.

2.d. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63 Subpart G and OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2.e The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Toledo Division of Environmental Services.

2.f. Not later than 30 days prior to the proposed test dates, the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the times and dates of the

tests, and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Director's refusal to accept the results of the emission tests.

2.g. Personnel from the Toledo Department of Environmental Services shall be permitted to witness the tests, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

2.h. A comprehensive written report on the results of the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services.

VI. Miscellaneous Requirement

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Formaldehyde Mfg. 2 (P812)

Activity Description: Formaldehyde Manufacturing Process

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
air oxidation formaldehyde manufacturing process controlled by catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-1109)	From Process: 2.5 lbs/hr of carbon monoxide 11.0 tpy of carbon monoxide 0.64 lb/hr of formaldehyde 2.8 tpy of formaldehyde 2.5 lbs/hr of methanol 11.0 tpy of methanol 7.5 lbs/hr of dimethyl ether 32.9 tpy of dimethyl ether 13.14 lbs/hr of VOC (including formaldehyde, methanol and dimethyl ether) 57.7 tpy of VOC 7.02 tpy of VOC (fugitive) See section A.I.2.a. below.
	OAC rule 3745-21-09(B)(4), (EE)	See section A.I.2.b below.
	OAC rule 3745-21-09(DD)	See section A.I.2.c below.
	40 CFR Part 60, Subpart VV	See section A.I.2.d below.
	40 CFR Part 60, Subpart III	See section A.I.2.e below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.f below.

2. Additional Terms and Conditions

2.a The requirements of this rule also include compliance with the requirements of 40 CFR Part 60, Subparts III and VV, 40 CFR Part 63, Subparts G and H, and OAC rule 3745-21-09(B)(4), (DD) and (EE).

2.b The process vent stream from this emissions unit shall be vented to a combustion device that is designed and operated either to reduce the VOC emissions vented to it with an efficiency of at least 98%, by weight, or to emit VOC at a concentration less than 20 ppm, by volume, on a dry basis.

2.c The permittee shall comply with the VOC leak detection and repair program requirements of OAC rule 3745-21-09(DD) by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart H for all VOC process equipment leaks.

2.d The permittee shall comply with the VOC leak detection and repair program requirements of 40 CFR Part 60, Subpart VV by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart H for all VOC process equipment leaks.

2.e The permittee shall comply with the VOC restrictions of 40 CFR Part 60, Subpart III by maintaining compliance with the operational restrictions, monitoring, record keeping and reporting requirements of 40 CFR Part 63, Subpart G for all air oxidation process vents.

2.f Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

1. The permittee shall not employ water pumped from the Ottawa River to use as non-contact cooling water in this emissions unit.

2. The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain daily records that document any time periods when water pumped from the Ottawa River was used as non-contact cooling water in this emissions unit.

2. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

4. The permittee shall keep a log or record of operating time for the capture (collection) system, the control equipment, the monitoring equipment and the emissions unit.

IV. Reporting Requirements

1. The permittee shall notify the Toledo Division of Environmental Services, in writing, of any daily record showing that water pumped from the Ottawa River was used as non-contact cooling water in this emissions unit. The notification shall include a copy of such record and shall be sent to the Toledo Division of Environmental Services within 30 days after the event occurs**.**

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

4. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the following reporting requirements are as stringent as or more stringent than the reporting requirements contained in the Permit to Install #04-1109, issued on August 19, 1998: A.IV.1 and A.IV.2. The reporting requirements contained in the above-referenced Permit to Install are subsumed into the reporting requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying reporting requirement in the Permit to Install.

5. The permittee shall submit quarterly summaries of the log or record of operating time for the capture (collection) system, the catalytic incinerator, the monitoring equipment and the emissions unit.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

2.5 lbs/hr of carbon monoxide (process)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 10.

1.b Emission Limitation:

11.0 tpy of carbon monoxide (process)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the hourly carbon monoxide emission rate, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the carbon monoxide emission limitation, by the annual hours of operation for this emissions unit and dividing by 2,000 pounds per ton.

1.c Emission Limitation:

0.64 lbs/hr of formaldehyde (process)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 63, Appendix A, Method 316.

1.d Emission Limitation:

2.8 tpy of formaldehyde (process)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the hourly formaldehyde emission rate, in lb/hr, determined during the most recent emission test which demonstrated compliance with the formaldehyde emission limitation, by the annual hours of operation for this emissions unit and dividing by 2,000 pounds per ton.

1.e Emission Limitation:

2.5 lbs/hr of methanol (process)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 63, Appendix A, Method 308.

1.f Emission Limitation:

11.0 tpy of methanol (process)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the hourly methanol emission rate, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the methanol emission limitation, by the annual hours of operation for this emissions unit and dividing by 2,000 pounds per ton.

1.g Emission Limitation:

7.5 lbs/hr of dimethyl ether (process)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 18.

1.h Emission Limitation:

32.9 tpy of dimethyl ether (process)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the hourly dimethyl ether emission rate, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the dimethyl ether emission limitation, by the annual hours of operation for this emissions unit and dividing by 2,000 pounds per ton.

1.i Emission Limitation:

13.14 lbs/hr of VOC (process) (including formaldehyde, methanol and dimethyl ether)

Applicable Compliance Method:

Compliance shall be demonstrated based upon the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 25.

1.j Emission Limitation:

57.7 tpy of VOC (process)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the VOC emission rate, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the hourly VOC emission limitation, by the annual hours of operation for this emissions unit and dividing by 2,000 pounds per ton.

1.k Emission Limitation:

7.02 tpy of VOC (fugitive)

Applicable Compliance Method:

Compliance shall be demonstrated by using the emission factors from "Control Techniques for Fugitive VOC Emissions from Chemical Process Facilities" EPA/625/R-93/005 March 1994 Table 7-2, or other approved alternate method, and the number of pumps, valves, flanges, etc. to calculate the pounds per hour of fugitive VOC emissions. The annual fugitive VOC emissions (in tons) shall be calculated by multiplying pounds per hour emission rate from all pumps, valves, flanges, etc. by the annual hours of operation of the equipment and dividing by 2000 pounds per ton.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a The emissions testing shall be conducted within 180 days after the effective date of this permit and within six months of the expiration date of this permit.

2.b The emission testing shall be conducted to demonstrate compliance with the control efficiency limitation (or discharge concentration) for total organic hazardous air pollutants and the allowable mass emission rates.

2.c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63 Subpart G and OAC rule 3745-21-10(C). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2.d. The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Toledo Division of Environmental Services.

2.e. Not later than 30 days prior to the proposed test dates, the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the times and dates of the tests, and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Director's refusal to accept the results of the emission tests.

2.f. Personnel from the Toledo Department of Environmental Services shall be permitted to witness the tests, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

2.g. A comprehensive written report on the results of the emissions tests shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Formic acid Tank (T001)

Activity Description: Formic acid Tank V-100

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof formic acid tank with no controls	OAC rule 3745-31-05(A)(3), (PTI 04-479)	0.15 ton of volatile organic compounds (VOC) per year. See sections A.I.2.a and A.I.2.b below.

2. Additional Terms and Conditions

2.a The permittee shall maintain and operate a submerged fill system for this emissions unit.

2.b The permittee shall maintain readily accessible records showing the dimensions of this tank and an analysis showing the capacity of this tank.

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;
b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;
c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and
d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emissions limitation.

2. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.15 tpy of VOC

Applicable Compliance Method:

Rolling, 12-month average VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Formaldehyde Tank (T004)

Activity Description: Formaldehyde Storage Tank V-145

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof formaldehyde storage tank, controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3), (PTI 04-479)	Visible emissions shall not exceed zero percent opacity. See sections A.I.2.a and A.I.2.b below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.c below.

2. Additional Terms and Conditions

2.a Emissions from this emissions unit shall be vented to the catalytic incinerator controlling emissions from emissions unit P801.

2.b The combined emissions from emissions units P801, T004 and T006 shall not exceed 3.07 tons of volatile organic compounds (VOC) per year.

2.c Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid; and

c. the throughput of the organic liquids stored in the tank (in gallons per calendar year).

2. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the

emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the combined emissions from emissions units P801, T004, and T006 exceeded the applicable VOC limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

Visible emissions shall not exceed zero percent opacity.

Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

1.b. Emission Limitation:

The combined emissions from emissions units P801, T004 and T006 shall not exceed 3.07 tons of VOC per year.

Applicable Compliance Method:

The permittee shall demonstrate compliance by multiplying the VOC emissions rate, in lbs/hr, determined during the most recent emission test for P801 which demonstrated compliance with the VOC emission limitation, by 8,760 hours and dividing by 2,000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Formaldehyde Tank (T006)

Activity Description: 85% Water and 15% Formaldehyde Storage Tank V-160

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof formaldehyde storage tank, controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3), (PTI 04-479)	Visible emissions shall not exceed zero percent opacity. See sections A.I.2.a and A.I.2.b below.
	40 CFR Part 60, Subpart Kb	See section A.I.2.c below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.d below.

2. **Additional Terms and Conditions**

2.a Emissions from this emissions unit shall be vented to the catalytic incinerator controlling emissions from emissions unit P801.

2.b The combined emissions from emissions units P801, T004 and T006 shall not exceed 3.07 tons of volatile organic compounds (VOC) per year.

2.c [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.d Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid; and

c. the throughput of the organic liquids stored in the tank (in gallons per calendar year).

2. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the combined emissions from emissions units P801, T004, and T006 exceeded the applicable VOC limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

Visible emissions shall not exceed zero percent opacity.

Applicable Compliance Method:

If required, compliance shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

1.b. Emission Limitation:

The combined emissions from emissions units P801, T004 and T006 shall not exceed 3.07 tons of VOC per year.

Applicable Compliance Method:

The permittee shall demonstrate compliance by multiplying the VOC emissions rate including formaldehyde, in lbs/hr, determined during the most recent emission test which demonstrated compliance with the VOC including formaldehyde lbs/hr emission limitation, by 8,760 hours and dividing by 2,000 pounds per ton.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Formaldehyde Tank (T016)

Activity Description: 50% Formaldehyde Storage Tank V-130

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof formaldehyde storage tank, controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3), (PTI 04-652)	0.03 tpy of organic compounds (OC) See section A.I.2.a below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.b below.

2. **Additional Terms and Conditions**

2.a. Emissions from this emissions unit shall be vented to the catalytic incinerator controlling emissions from emissions unit P801.

2.b Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

1. The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled OC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

2. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and

recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the OC emissions exceeded the emissions limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.03 tpy of OC

Applicable Compliance Method:

Annual OC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions and a control efficiency based on the most recent emission test which demonstrated compliance with the control efficiency requirements for emissions unit P801. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Tank (T017)

Activity Description: Methanol Storage Tank V-146

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof methanol storage tank, controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3), (PTI 04-652)	0.02 tpy of organic compounds (OC) See section A.I.2.a below.
	40 CFR Part 63, Subparts G and H.	See section A.I.2.b below.

2. **Additional Terms and Conditions**

2.a Emissions from this emissions unit shall be vented to the catalytic incinerator controlling emissions from emissions unit P801.

2.b Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled OC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

2. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and

recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the OC emissions exceeded the emissions limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.02 tpy of OC

Applicable Compliance Method:

Annual OC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions and a control efficiency based on the most recent emission test which demonstrated compliance with the control efficiency requirements for emissions unit P801. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: trimethylolpropane tank (T020)

Activity Description: trimethylolpropane tank V-900

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Fixed roof storage tank for trimethylolpropane, with no control	OAC rule 3745-31-05(A)(3) (PTI 04-949)	0.24 tpy of volatile organic compounds (VOC) See sections A.II.1. and 2. below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

1. The permittee shall maintain and operate a pressure relief valve with a minimum setting of 2" water column.

2. The permittee shall maintain and operate a liquid seal filled with glycerine.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emission limitation.

2. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.24 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: trimethylolpropane tank (T021)

Activity Description: trimethylolpropane tank V-910

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Fixed roof storage tank for trimethylolpropane, with no control	OAC rule 3745-31-05(A)(3) (PTI 04-949)	0.24 tpy of volatile organic compounds (VOC) See sections A.II.1. and 2. below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of the permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

1. The permittee shall maintain and operate a pressure relief valve with a minimum setting of 2" water column.

2. The permittee shall maintain and operate a liquid seal filled with glycerine.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid**;**

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emission limitation.

2. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.24 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Neopentyl glycol tank (T023)

Activity Description: Neopentyl glycol tank V-980

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
24,200 gal. fixed roof storage tank for neopentyl glycol with no control	OAC rule 3745-31-05(A)(3) (PTI 04-01251)	0.59 tpy of volatile organic compounds (VOC)

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emission limitation.

2. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.59 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: TMP co-product tank (T024)

Activity Description: Storage Tank for TET Solution

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
24,200 gal. fixed roof storage tank for TMP co-product with no control	OAC rule 3745-31-05(A)(3) (PTI 04-01251)	0.68 tpy of volatile organic compounds (VOC) See section A.I.2.a below.

2. Additional Terms and Conditions

2.a The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(D)(2).

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emissions limitation.

2. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.68 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Formaldehyde Tank (T025)

Activity Description: Formaldehyde Storage Tank - Penta Plant, V-120

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for 12% formaldehyde, no controls	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol/Formaldehyde Tank. (T026)

Activity Description: Methanol/Formaldehyde Blend Storage Tank, V-55

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde-methanol mixture controlled by a closed vent system with a catalytic incinerator	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subpart G and H.

II. Operational Restrictions
None

III. Monitoring and/or Record keeping Requirements
None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol/Formaldehyde Tank (T027)

Activity Description: Methanol/Formaldehyde Blend Storage Tank V-56

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde-methanol mixture controlled by a closed vent system with a catalytic incinerator	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. **Additional Terms and Conditions**

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Blend Tank (T028)

Activity Description: Methanol/formaldehyde blend storage tank V-57

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde-methanol mixture controlled by a closed vent system with a catalytic incinerator	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions
None

III. Monitoring and/or Record keeping Requirements
None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Blend Tank (T029)

Activity Description: Methanol/formaldehyde blend storage tank V-58

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde-methanol mixture controlled by a closed vent system with a catalytic incinerator	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions
None

III. Monitoring and/or Record keeping Requirements
None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions For Emissions Units

Emissions Unit ID: Formaldehyde Tank (T101)

Activity Description: Formaldehyde Storage Tank #54

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof formaldehyde storage tank controlled by a closed vent system with a catalytic incinerator	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions
None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Formaldehyde Tank (T102)

Activity Description: Formaldehyde Storage Tank #59

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof formaldehyde storage tank controlled by a closed vent system with a catalytic incinerator	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Tank (T104)

Activity Description: Methanol Storage Tank V-10

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
internal floating roof storage tank for methanol, no controls	40 CFR Part 63, Subparts G and H	See section A.I.2.a below.

2. Additional Terms and Conditions

2.a Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Methanol/Formaldehyde Tank (T105)

Activity Description: Methanol/Formaldehyde Blend Storage Tank #101-102-1.1

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde-methanol mixture controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-278)	0.08 tpy of formaldehyde/methanol See section A.I.2.a and b below.
	40 CFR Part 60, Subpart Kb	See section A.I.2.c below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.d below.

2. **Additional Terms and Conditions**

2.a The tank vent(s) shall be controlled by the use of a condenser followed by a catalytic incinerator.

2.b The 97% destruction efficiency in the PTI is less stringent than the 98% destruction efficiency required by 40 CFR Part 63, Subparts G and H.

2.c [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.d Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

3. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emission limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.08 tpy of formaldehyde/methanol

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions, and the control efficiency determined during the most recent stack test which demonstrated compliance with the control requirement. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

1.b Emission Limitation:

98% destruction efficiency

Applicable Compliance Method:

If required, testing shall be conducted to demonstrate compliance with this emission limitation for organic compounds. The capture efficiency shall be determined using Methods 204 through 204 F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the

determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control sytstem) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63, Appendix A, Method 316, or other methods approved by the Director. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms And Conditions For Emissions Units

Emissions Unit ID: Methanol/Formaldehyde Tank (T106)

Activity Description: Methanol/Formaldehyde Blend Storage Tank #202-103-1.1

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde-methanol mixture controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-278)	0.14 tpy of formaldehyde/methanol See sections A.I.2.a and A.I.2.b below.
	40 CFR Part 60, Subpart Kb	See section A.I.2.c below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.d below.

2. Additional Terms and Conditions

2.a The tank vent(s) shall be controlled by the use of a condenser followed by a catalytic incinerator.

2.b The 97% destruction efficiency in the PTI is less stringent than the 98% destruction efficiency required by 40 CFR Part 63, Subparts G and H.

2.c. [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.d Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance; and

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

3. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions exceeded the emission limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.14 tpy of formaldehyde/methanol

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions, and the control efficiency determined during the most recent stack test which demonstrated compliance with the control requirement. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

1.b Emission limitation:

98% destruction efficiency

Applicable Compliance Method:

If required, testing shall be conducted to demonstrate compliance with this emission limitation for organic compounds. The capture efficiency shall be determined using Methods 204 through 204 F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the

determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control sytstem) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63, Appendix A, Method 316, or other methods approved by the Director. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Tank (T108)

Activity Description: Methanol Storage Tank, V-100

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
internal floating roof storage tank for methanol, no controls	OAC rule 3745-31-05(A)(3) (PTI 04-1043)	0.2 tpy of volatile organic compounds (VOC)
	40 CFR Part 60, Subpart Kb	See section A.I.2.a below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.b below.

2. Additional Terms and Conditions

2.a [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.b Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

1. The permittee shall maintain records of the following information on a monthly basis:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month uncontrolled VOC emissions calculated using the total rolling, 12-month throughput, volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions from this emissions unit exceeded the VOC emission limitation.

2. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.2 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Formaldehyde Tank (T109)

Activity Description: Formaldehyde Storage Tank V-510

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-1043)	0.01 tpy of volatile organic compounds (VOC) See section A.I.2.a below.
	40 CFR Part 60, Subpart Kb	See section A.I.2.b below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.c below.

2. **Additional Terms and Conditions**

2.a The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% destruction efficiency.

2.b [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.c Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit ((28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance;

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance; and

c. a log of the downtime for the capture (collection system, control device, and monitoring equipment when this emissions unit was in operation.

3. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month VOC emission calculated using the total rolling, 12-month throughput, volume of the tank, USEPA's "Tanks Program 4.0" or subsequent versions and the destruction efficiency determined during the most recent stack test which demonstrated compliance with the destruction efficiency requirement.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions from this emissions unit exceeded the VOC emission limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following method:

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions, and the control efficiency determined during the most recent stack test which demonstrated compliance with the control requirement. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

1.b Emission Limitation:

The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% destruction efficiency.

Applicable Compliance Method:

If required, testing shall be conducted to demonstrate compliance with this emission limitation for VOC. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63, Appendix A, Method 316, or other methods approved by the Director. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Formaldehyde Tank (T110)

Activity Description: Formaldehyde Storage Tank, V-520

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-1043)	0.01 tpy of volatile organic compounds (VOC) See section A.I.2.a below.
	40 CFR Part 60, Subpart Kb	See section A.I.2.b below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.c below.

2. **Additional Terms and Conditions**

2.a The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% destruction efficiency.

2.b [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.c Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit ((28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance;

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance; and

c. a log of the downtime for the capture (collection system, control device, and monitoring equipment when this emissions unit was in operation.

3. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month VOC emission calculated using the total rolling, 12-month throughput, volume of the tank, USEPA's "Tanks Program 4.0" or subsequent versions and the destruction efficiency determined during the most recent stack test which demonstrated compliance with the destruction efficiency requirement.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions from this emissions unit exceeded the VOC emission limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

1. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions, and the control efficiency determined during the most recent stack test which demonstrated compliance with the control requirement. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

1.b Emission Limitation:

The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% destruction efficiency.

Applicable Compliance Method:

If required, testing shall be conducted to demonstrate compliance with this emission limitation for VOC. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63, Appendix A, Method 316, or other methods approved by the Director. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Formaldehyde Tank (T111)

Activity Description: Formaldehyde Storage Tank, V-530

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fixed roof storage tank for formaldehyde controlled by a closed vent system with a catalytic incinerator	OAC rule 3745-31-05(A)(3) (PTI 04-1043)	0.01 tpy of volatile organic compounds (VOC) See section A.I.2.a below.
	40 CFR Part 60, Subpart Kb	See section A.I.2.b below.
	40 CFR Part 63, Subparts G and H	See section A.I.2.c below.

2. **Additional Terms and Conditions**

2.a The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% destruction efficiency.

2.b [63.110(b)(1)]
A storage vessel that is also subject to the provisions of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 63, Subpart G.

2.c Refer to Part II - Specific Facility Terms and Conditions of this permit for the requirements of 40 CFR Part 63, Subparts G and H.

II. Operational Restrictions

The average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance. The average temperature across the catalyst bed, for any 3-hour block of time when the emissions unit is in operation, shall not be less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain continuous temperature monitors and recorders which measure and record the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit or Celsius. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information each day:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance;

b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent emission test that demonstrated the emissions unit was in compliance; and

c. a log of the downtime for the capture (collection system, control device, and monitoring equipment when this emissions unit was in operation.

3. The permittee shall maintain records of the following information:

a. the types of organic liquids stored in the tank;

b. the maximum true vapor pressure (in pounds per square inch absolute), as stored, of each liquid;

c. the throughput of the organic liquids stored in the tank (in gallons per rolling, 12-month period); and

d. the rolling, 12-month VOC emission calculated using the total rolling, 12-month throughput, volume of the tank, USEPA's "Tanks Program 4.0" or subsequent versions and the destruction efficiency determined during the most recent stack test which demonstrated compliance with the destruction efficiency requirement.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time when the emissions unit was in operation during which the average temperature of the exhaust gases immediately before the catalyst bed or the average temperature difference across the catalyst bed does not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the VOC emissions from this emissions unit exceeded the VOC emission limitation.

3. The deviation (excursion) reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c. of this permit.

V. Testing Requirements

3. Compliance with the emission limitation in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

Annual VOC emissions shall be calculated using the total annual throughput volume of the tank and USEPA's "Tanks Program 4.0" or subsequent versions, and the control efficiency determined during the most recent stack test which demonstrated compliance with the control requirement. AP-42, Section 7.1 (9/97 version) may be used in lieu of "Tanks Program 4.0."

1.b Emission Limitation:

The emissions from this emissions unit shall be vented to a catalytic incinerator with a minimum of 98% destruction efficiency.

Applicable Compliance Method:

If required, testing shall be conducted to demonstrate compliance with this emission limitation for VOC. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 63, Appendix A, Method 316, or other methods approved by the Director. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations, property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (in any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

II Monitoring and/or Record keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None