



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

09/28/01

CERTIFIED MAIL

RE: Final Title V Chapter 3745-77 permit

16-77-01-0029
PMD Group Inc
William Ramus
240 West Emerling Avenue
Akron, OH 44301-1600

Dear William Ramus:

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
236 East Town Street
Room 300
Columbus, Ohio 43215

If you have any questions, please contact Akron Air Pollution Control.

Very truly yours,

Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

cc: Akron Air Pollution Control
File, DAPC PMU



State of Ohio Environmental Protection Agency

FINAL TITLE V PERMIT

Issue Date: 09/28/01	Effective Date: 09/28/01	Expiration Date: 09/28/06
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This document constitutes issuance of a Title V permit for Facility ID: 16-77-01-0029 to:
PMD Group Inc
240 West Emerling Avenue
Akron, OH 44301-1600

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

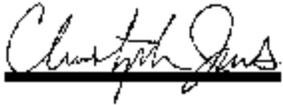
B001 (Gas Boiler #1) 93 mmBTU/hr. natural gas boiler #1	P016 (DPA A/O) DPA A/O - Petroleum Additives & Rubber Antioxidants - reactors, washers, stills, filter, recovery equipment	cylindrical storage tank T071 (TK4) Recovered Aniline - 26,844 gallon horizontal cylindrical storage tank
B002 (Gas Boiler #2) 64 mmBTU/hr. natural gas boiler #2	P019 (DPPD) DPPD - Rubber Chemical - reactors, blowdown tanks, still, and aniline recovery system	T077 (TK9T7) Triisobutylene - 13,532 gallon vertical cylindrical storage tank
B008 (Coal Fired Boiler) 115 mmBTU/hr. coal fired boiler	P020 (RLP) RLP - Reactive Liquid Polymers - reactors, processing vessels, product purification, finishing, and raw material recovery	T079 (TK8T6) Styrene - 14,380 gallon vertical cylindrical storage tank
F004 (Ash Handling) Ash Handling	T041 (AN #60) Acrylonitrile tank #60 - 12,000 gallon horizontal storage tank	T080 (TK23) Vanlube 9221 - 12,142 gallon vertical cylindrical storage tank
P003 (Superlite) Superlite - Organic Rubber Chemical, reactor, stripper, condensers, and filter.	T042 (AN #61) Acrylonitrile tank #61 - 12,000 gallon horizontal storage tank	T082 (TK16T12) DPA - 28,000 gallon horizontal storage tank
P005 (A/O Blends) A/O Blends - ribbon blenders, mills, rotary screen, bagger	T043 (Styrene - #62) Styrene tank #62 - 12,000 gallon horizontal storage tank	T083 (TK12T10) Recovered P-Trimer - 14,300 gallon vertical cylindrical storage tank
P006 (ARD) Agerite Resin D - Organic Rubber Chemical Antioxidant - reactors, washers, stills, recovery and finishing equipment	T044 (AN - #63) Acrylonitrile tank #63 - 12,000 gallon horizontal storage tank	T084 (TK15T11) Diisobutylene - 28,000 gallon horizontal storage tank
P007 (Hycar) Hycar - Synthetic Rubber Latex Manufacturer - polymerizers, blowdown tanks, concentrators, blend tanks, etc.	T070 (TK1) Recovered Acetone -26,844 gallon horizontal	
P012 (DEPA) DEPA - Organic Rubber Chemical - reactor, wash tank, feed tank, filter		

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 3745-77-04(A) 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 Ohio EPA District Office or local air agency that is responsible for processing and administering your Title V permit:

Akron Air Pollution Control
146 South High Street, Room 904
Akron, OH 44308
(330) 375-2480

OHIO ENVIRONMENTAL PROTECTION AGENCY

A handwritten signature in black ink, appearing to read "Christopher Jones", is written over a solid black horizontal line.

Christopher Jones
Director

PART I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Section

1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, 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.
- 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.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - i. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
 - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be promptly made to the appropriate Ohio EPA District Office or local air agency. These quarterly written reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c)(i) and (ii) pertaining to the submission of monitoring reports every six months and OAC rule 3745-77-07(A)(3)(c)(iii) pertaining to the prompt reporting of all deviations except malfunctions, which shall be reported in accordance with OAC rule 3745-15-06. The written 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.) See B.8 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. These semi-annual written reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c)(i) and (ii) pertaining to the reporting of any deviations related to the monitoring, recordkeeping, and reporting requirements. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
- 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 are true, accurate, and complete.

2. 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, i.e., upset, 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. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports submitted pursuant to OAC rule 3745-15-06 shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c)(iii) pertaining to the prompt reporting of deviations caused by malfunctions or upsets.

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 emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to 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"), the permittee shall comply with the requirement to register such a plan.

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.

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.

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. 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.

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.

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.

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.

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 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.

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.

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 appropriate Ohio EPA District Office or local air agency 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.

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.

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).

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.

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, except that no such notice shall be required for changes that qualify as insignificant emission levels or activities as defined in OAC rule 3745-77-01(U). 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; and
- 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.

(For further clarification, the permittee can refer to Engineering Guide #63 that is available in their STARSHIP software package.)

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.

18. Insignificant Activity

Each insignificant activity that has one or more applicable requirements shall comply with those applicable requirements.

Facility Name: PMD Group Inc
Facility ID: 16-77-01-0029

B. State Only Enforceable Section

1. 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.

2. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping 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 (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) 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. 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.)

3. 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.

4. 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.

5. 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).

6. 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.

7. 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.

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

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.

Part II - Specific Facility Terms and Conditions

A. State and Federally Enforcable Section

1. This facility is subject to 40 CFR Part 68 (112(r) of the Clean Air Act).

B. State Only Enforceable Section

1. The following insignificant emissions units are located at this facility:

B003 - 1.7 mmBtu/hr natural gas-fired boiler;
B004 - 1.7 mmBtu/hr natural gas-fired boiler;
B009 - 2.2 mmBtu/hr natural gas-fired boiler;
F001 - plant roadways & parking areas;
F002 - coal storage piles;
F003 - material handling;
G001 - gas dispensing 120/T12;
G002 - diesel dispensing;
P002 - solid Superlite process;
P022 - lab vents;
P023 - ETBN blend tank - process vessel and drumming equipment;
P024 - Dimer collection - process vessels;
T013 - 30,100-gallon fixed roof storage tank;
T020 - 36,000-gallon fixed roof storage tank;
T022 - 13,000-gallon fixed roof storage tank;
T031 - 19,100-gallon fixed roof storage tank;
T032 - 24,100-gallon fixed roof storage tank;
T033 - 29,000-gallon fixed roof storage tank;
T034 - 23,300-gallon fixed roof storage tank;
T036 - 23,300-gallon fixed roof storage tank;
T037 - 5,000-gallon fixed roof storage tank;
T039 - 11,300-gallon fixed roof storage tank;
T040 - 5,600-gallon fixed roof storage tank;
T045 - 26,000-gallon pressurized fixed roof storage tank;
T046 - 26,000-gallon pressurized fixed roof storage tank;
T047 - 16,000-gallon pressurized fixed roof storage tank;
T048 - 28,000-gallon pressurized fixed roof storage tank;
T050 - 5,000-gallon fixed roof storage tank;
T051 - 4,100-gallon fixed roof storage tank;
T052 - 12,600-gallon fixed roof storage tank;
T053 - 12,600-gallon fixed roof storage tank;
T054 - 6,000-gallon fixed roof storage tank;
T055 - 6,000-gallon fixed roof storage tank;
T058 - 8,413-gallon fixed roof storage tank;
T059 - 7,235-gallon fixed roof storage tank;
T060 - 1,900-gallon fixed roof storage tank;
T062 - 8,000-gallon fixed roof storage tank;
T063 - 1,500-gallon vertical cylindrical tank;

B. State Only Enforceable Section (continued)

T064 - 7,500-gallon vertical cylindrical tank;
T065 - 340-gallon fixed roof storage tank;
T066 - 200-gallon fixed roof storage tank;
T067 - 250-gallon fixed roof storage tank;
T068 - 285-gallon fixed roof storage tank;
T069 - 275-gallon fixed roof storage tank;
T072 - chemical storage and mixing tanks;
T073 - 11,147-gallon vertical cylindrical tank;
T074 - 11,147-gallon vertical cylindrical tank; and
T075 - 23,300-gallon vertical cylindrical tank.

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 a permit to install for the emissions unit.

2. Should this facility become subject to a promulgated MACT category, within 30 days after the MACT compliance deadline, the permittee shall resubmit the Title V application and identify what parts of the MACT are applicable, as well as how and when compliance with the MACT was or will be achieved.

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Gas Boiler #1 (B001)
Activity Description: 93 mmBTU/hr. natural gas boiler #1

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
natural gas-fired steam generating boiler	OAC rule 3745-17-07	See A.2.a below.
	OAC rule 3745-17-10(B)(1)	0.020 pound of particulates per million Btu actual heat input

2. Additional Terms and Conditions

- 2.a Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

II. Operational Restrictions

None

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 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.

IV. Reporting Requirements

1. 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 Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations in sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.020 pound of particulate matter per million Btu actual heat input

Applicable Compliance Method:

Compliance shall be demonstrated using the particulate emission factor of 0.0075 pound per million Btu (AP-42, dated 3/98, Table 1.4-2).

1.b Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: Gas Boiler #2 (B002)
Activity Description: 64 mmBTU/hr. natural gas boiler #2

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
natural gas-fired steam generating boiler	OAC rule 3745-17-07	See A.2.a below.
	OAC rule 3745-17-10(B)(1)	0.020 pound of particulates per million Btu actual heat input

2. Additional Terms and Conditions

- 2.a Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, 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 sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:

0.020 pound of particulate matter per million Btu actual heat input

Applicable Compliance Method:

Compliance shall be demonstrated using the particulate emission factor of 0.0075 pound per million Btu (AP-42, dated 3/98, Table 1.4-2).

V. Testing Requirements (continued)

1.b Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: Coal Fired Boiler (B008)
Activity Description: 115 mmBTU/hr. coal fired boiler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
115 mmBtu/hr Babcock & Wilcox coal-fired boiler with a baghouse	OAC rule 3745-17-07	See A.1.2.a below.
	OAC rule 3745-17-10	0.19 pound of particulates per million Btu actual heat input
	OAC rule 3745-18-83(H)	4.5 pounds of sulfur dioxide per million Btu actual heat input
	40 CFR 52.1881(b)(59)(xx)	See A.1.2.b below.

2. Additional Terms and Conditions

- 2.a Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
- 2.b The sulfur dioxide emission limitation required by 40 CFR 52.1881(b)(59)(xx) is less stringent than the sulfur dioxide emission limitation specified in OAC rule 3745-18-83(H).

II. Operational Restrictions

1. The quality of the coal burned in this emissions unit shall meet the following specifications on an "as received" wet basis:
 - a. less than 14 percent ash by weight;
 - b. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 4.5 pounds of sulfur dioxide per million Btu actual heat input; and
 - c. greater than 10,500 Btu per pound of coal.

Compliance with the above-mentioned specifications shall be determined by using the analytical results for the partial-month composite samples of coal collected during each calendar month.

2. While the emissions unit is in operation, the pressure drop across the entire baghouse shall be maintained within the range of 1.0 to 9.0 inches of water while the emissions unit is in operation

II. Operational Restrictions (continued)

3. The daily average operating rate for this emissions unit shall not exceed the following: first quarter, 100 mmBtu/hr; second quarter, 100 mmBtu/hr; third quarter, 70 mmBtu/hr; and fourth quarter, 100 mmBtu/hr.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect a representative sample of each shipment of coal which is received for burning. The coal sampling shall be performed in accordance with ASTM method D2234, Collection of a Gross Sample of Coal. At the end of each calendar month, the representative samples of coal from all shipments of coal which were received during that calendar month shall be combined into one composite sample.

Each monthly composite sample of coal shall be analyzed for ash content (percent), sulfur content (percent), and heat content (Btu/pound of coal). The analytical methods for ash content, sulfur content and heat content shall be: ASTM method D3174, Ash in the Analysis of Coal and Coke; ASTM method D3177, Total Sulfur in the Analysis Sample of Coal and Coke or ASTM method D4239, Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods; and ASTM method D2015, Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, ASTM method D3286, Gross Calorific Value of Coal and Coke by the Isothermal Bomb Calorimeter, or ASTM method D1989, Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters, respectively. Alternative, equivalent methods may be used upon written approval from the appropriate Ohio EPA District Office or local air agency.

2. The permittee shall maintain monthly records of the total quantity of coal received, and the results of the analyses for ash content, sulfur content, and heat content.
3. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
4. The permittee shall maintain daily records of the daily average operating rate, in mmBtu/hr, for this emissions unit.

IV. Reporting Requirements

1. Quarterly reports shall be submitted concerning the quality and quantity of coal received for burning in this emissions unit. These reports shall include the following information for the emissions unit for each calendar month during the calendar quarter:

- a. the total quantity of coal received (tons);
- b. the average* ash content (percent) of the coal received;
- c. the average* sulfur content (percent) of the coal received;
- d. the average* heat content (Btu/pound) of the coal received; and
- e. the average* sulfur dioxide emissions rate (pounds sulfur dioxide/mmBtu actual heat input) from the coal received.

* The analytical results of the partial-month composite samples shall be used to calculate the weighted arithmetic average ash content, heat content, sulfur content, and sulfur dioxide emissions rate for the calendar month. The analytical results shall be weighted based upon the tons of coal burned that is associated with each set of analytical results.

These quarterly reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall cover the data obtained during the previous calendar quarters.

IV. Reporting Requirements (continued)

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
3. The permittee shall submit deviation (excursion) reports which document all exceedances of the operating rate limitations specified above.
4. The deviation 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. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 6 months prior to permit renewal.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for particulates.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for particulates - Methods 1 through 5 of 40 CFR Part 60, Appendix A.
 - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
3. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.
4. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).
5. Compliance with the emission limitations in sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:
 - 5.a Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

V. Testing Requirements (continued)

5.b Emission Limitations:

0.19 pound of particulates per million Btu actual heat input

Applicable Compliance Methods:

Compliance shall be demonstrated using the stack testing as required in sections A.V.1 through A.V.4 of these terms and conditions.

5.c Emission Limitation:

4.5 pounds of sulfur dioxide per million Btu actual heat input

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping required in sections A.III.1 and A.III.2 of these terms and conditions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: Ash Handling (F004)

Activity Description: Ash Handling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
fly ash and/or bottom ash vacuum conveying to silos, and fly ash and/or bottom ash silo load-out by auger conveying with impingement scrubber into trucks or railcars	OAC rule 3745-17-07(B)(7)(b)	20 percent opacity for fly ash and/or bottom ash vacuum conveying to silos and fly ash and/or bottom ash silo load-out by auger conveying with impingement scrubber into trucks and/or railcars, as a 3-minute average
	OAC rule 3745-17-08	reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (see sections A.I.2.a. through A.I.2.c.)

2. Additional Terms and Conditions

- 2.a The permittee shall employ reasonable available control measures on all fly ash and/or bottom ash vacuum conveying equipment for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to maintaining total enclosure of such equipment to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- 2.b The permittee shall employ reasonable available control measures for the dumping of fly ash and/or bottom ash from storage silos to trucks for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to apply sufficient water to the fly ash and/or bottom ash during any load-out from storage silos to trucks to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- 2.c Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-17-08.
- 2.d There are no vents to the atmosphere associated with the silo.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform daily checks, while the equipment is in operation, for any visible emissions of fugitive dust escaping from any fly ash and/or bottom ash vacuum conveying system and of the effectiveness of the water addition to the fly ash and/or bottom ash during loadout from storage silos into dump trucks in ensuring compliance with the above-mentioned applicable requirements during silo loadout. A record of the necessary and completed corrective actions resulting from the daily checks shall be maintained by the permittee.

IV. Reporting Requirements

1. The permittee shall submit deviation reports in accordance with the reporting requirements of the General Terms and Conditions which identify each day that the observations required under the monitoring section of this permit were not performed and each day that any corrective measures required to be taken pursuant to the monitoring section of this permit were not performed.

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 percent opacity for fly ash and/or bottom ash vacuum conveying to silos and fly ash and/or bottom ash silo load-out into trucks and/or railcars, as a 3-minute average

Applicable Compliance Method:

Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03*

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: Superlite (P003)

Activity Description: Superlite - Organic Rubber Chemical, reactor, stripper, condensers, and filter.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Superlite organic rubber chemical with two dust collectors and one condenser as control	OAC rule 3745-17-07(B)	See A.1.2.b below.
	OAC rule 3745-17-08	See A.1.2.d below.
	OAC rule 3745-21-09(BBB)(2)	See A.1.2.c below.

2. Additional Terms and Conditions

- 2.a
 - i. The following unit operations emit particulates: the blender which is vented to a dust collector and the raw material load-in which is vented to a dust collector.
 - ii. The following unit operations emit VOC: the reactor, the filter, the stripper jet, the blend tank, the styrene weigh tank, and the precoat which are vented to a condenser and the associated piping (i.e., connectors, flanges, pumps, etc.).
- 2.b Visible particulate emissions from any fugitive dust source shall not exceed twenty percent opacity, as a three-minute average.
- 2.c For the Superlite (trademark) process, the VOC emissions from the reactor process vent streams, except the process emergency safety relief devices, shall be vented to a control device that is designed and operated to achieve a control efficiency of at least ninety-five per cent, by weight, as determined under paragraph (C) of rule 3745-21-10 of the Administrative Code.
- 2.d The permittee shall use hoods, fans, and other equipment to adequately enclose, contain, capture, vent, and control the fugitive dust. Such equipment shall meet the following requirements:
 - i. the collection efficiency shall be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design; and
 - ii. there shall be no visible particulate emissions from the exhaust stack(s) of the control equipment.

II. Operational Restrictions

1. The average temperature of the exhaust gases from the condenser, for any 3-hour block of time, shall not be greater than 126 degrees Fahrenheit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average temperature of the exhaust gases from the condenser, when the emissions unit was in operation, was greater than the temperature limitation specified above; and
 - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
2. 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 exhausts of the dust collectors serving this emissions unit and for any visible particulates emissions from any windows, doors, and/or roof monitors 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. For the windows, doors, and/or roof monitors serving this emissions unit:
 - i. the color of the emissions;
 - ii. whether the emissions are representative of normal operations;
 - iii. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - iv. the total duration of any visible emission incident; and
 - v. any corrective actions taken to eliminate the visible emissions.
 - b. For the exhausts of the dust collectors serving this emissions unit:
 - i. the color of the emissions;
 - ii. the cause of the abnormal emissions;
 - iii. the total duration of any visible emission incident; and
 - iv. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit temperature deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of the exhaust gases from the condenser exceeded the temperature limitation specified above.
2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the exhausts of the dust collectors serving this emissions unit and/or from any windows, doors, and/or roof monitors serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The deviation 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. The permittee shall conduct, or have conducted, emission testing for the condenser associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 6 months after issuance of the permit.
 - b. The emission testing shall be conducted to demonstrate compliance with the control efficiency limitation for VOC.
 - c. The following test method(s) shall be employed to demonstrate compliance with the control efficiency limitation: for VOC, Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A .
 - 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 OAC rule 3745-21-10. 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.
 - e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
3. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.
4. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
5. Compliance with the emission limitations in sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:
 - 5.a Emission Limitation:

20% opacity as a 3-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)
 - 5.b Emission Limitation:

no visible particulate emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

V. Testing Requirements (continued)

5.c Emission Limitation:

a control efficiency of at least ninety-five per cent, by weight

Applicable Compliance Method:

Compliance shall be demonstrated using Reference Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: A/O Blends (P005)

Activity Description: A/O Blends - ribbon blenders, mills, rotary screen, bagger

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
antioxidants blends - ribbon blenders, mills, rotary screen,	OAC rule 3745-17-07	See A.I.2.b below.
bagger with two baghouses as control	OAC rule 3745-17-11	1.98 lbs/hr of particulates (total from both baghouses combined)

2. Additional Terms and Conditions

- 2.a The following unit operations emit particulates: the charging hopper, the blender, the two hoppers, the fitz mill, the delumper, the drum filling station, the three feeders, the two screeners, the surge hopper, the pellet mill, the bagging station, and the associated conveying and transfer points which are vented to either baghouse #1 or baghouse #2.
- 2.b Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

II. Operational Restrictions

1. The pressure drop across each baghouse shall be maintained within the range established either during the most recent emission test that demonstrated that the emissions unit was in compliance or by the manufacturer's written recommendation while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). When the emissions unit is in operation, the permittee shall record the pressure drop across each baghouse on a once per day basis.

III. Monitoring and/or Record Keeping Requirements (continued)

2. 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 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.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across any baghouse did not comply with the allowable range specified above.
2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the two baghouses associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 18 months after issuance of the permit.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for particulates, Methods 1-5 of 40 CFR Part 60, Appendix A.
 - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
3. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.

V. Testing Requirements (continued)

4. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

5. Compliance with the emission limitations in sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:

5.a Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

5.b Emission Limitation:

1.98 lbs/hr of particulates

Applicable Compliance Method:

Compliance shall be demonstrated using Reference Methods 1-5 of 40 CFR Part 60, Appendix A as required in Sections A.V.1 through A.V.4 of these terms and conditions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: ARD (P006)

Activity Description: Agerite Resin D - Organic Rubber Chemical Antioxidant - reactors, washers, stills, recovery and finishing equipment

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Agerite Resin D organic rubber chemical antioxidant - reactors, washers, stills, recovery & finishing equipment controlled with a baghouse and a packed bed scrubber	OAC rule 3745-31-05 (PTI 16-1525)	0.96 lb/hr of volatile organic compounds (VOC)
	OAC rule 3745-17-07	See A.I.2.b below.
	OAC rule 3745-17-11	6.35 lbs/hr of particulates
	OAC rule 3745-21-09(BBB)(1)	See A.I.2.c below.

2. Additional Terms and Conditions

- 2.a
 - i. The following unit operations emit particulates: the pastille system, the pastille storage, and the packaging station which are vented to a baghouse.
 - ii. The following unit operations emit VOC: the acetone recovery system, the aniline recovery system, the recovery system feed tank, the charge make-up system, the reaction system, the product neutralization system, the product distillation system which are vented to the packed bed scrubber and the associated piping (i.e., connectors, flanges, pumps, etc.).
- 2.b Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
- 2.c For the agerite resin D process, the VOC emissions from the recovery system vents and product neutralization and distillation system vents, except wash kettles (or still feed) condenser vents, stills, vacuum jet tailpipe vents, and process emergency safety relief devices, shall not exceed 1.0 ton per year.

II. Operational Restrictions

1. The scrubber water supply pressure shall be continuously maintained at a value of not less than than the value established either during the most recent emission test that demonstrated that the emissions unit was in compliance or by the scrubber manufacturer, in pounds per square inch (gauge), at all times while the emissions unit is in operation.

The scrubber water flow rate shall be continuously maintained at a value of not less than the value established either during the most recent emission test that demonstrated that the emissions unit was in compliance or by the scrubber manufacturer, in gallons per minute, at all times while the emissions unit is in operation.

II. Operational Restrictions (continued)

2. While the emissions unit is in operation, the pressure drop across the baghouse shall be maintained within the range of 4.0 to 10.0 inches of water while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor and record the water supply pressure and the water flow rate while the emissions unit is in operation. The monitoring devices and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

The permittee shall collect and record the following information each day:

- a. the water supply pressure, in psig;
 - b. the water flow rate, in gpm; and
 - c. a log or record of the downtime for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
 3. 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.

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 required levels:
 - a. the water supply pressure; and
 - b. the scrubber water flow rate.
2. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
3. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the baghouse 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 Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
4. The deviation 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. The permittee shall conduct, or have conducted, emission testing for the baghouse and the recovery system vents and product neutralization and distillation system vents associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 30 months after issuance of the permit.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates and for VOC and control efficiency limitation for VOC.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for particulates, Methods 1-5 of 40 CFR Part 60, Appendix A and for VOC, Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A .
 - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
3. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.
4. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
5. Compliance with the emission limitations in sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:
 - 5.a Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)
 - 5.b Emission Limitation:

6.35 lbs/hr of particulates

Applicable Compliance Method:

Compliance shall be demonstrated using Reference Methods 1-5 of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions.

V. Testing Requirements (continued)

5.c Emission Limitation:

1.0 ton of VOC per year

Applicable Compliance Method:

Compliance shall be demonstrated using Reference Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions.

5.d Emission Limitation:

0.96 lb/hr of VOC

Applicable Compliance Method:

Compliance shall be demonstrated using Reference Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions for stack emissions plus the VOC emission rate, in pounds per hour, as determined from EPA-453/R-95-017 "Protocol for Equipment Leak Emission Estimates" for fugitive emissions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: Hycar (P007)

Activity Description: Hycar - Synthetic Rubber Latex Manufacturer - polymerizers, blowdown tanks, concentrators, blend tanks, etc.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Hycar synthetic rubber latex - polymerizers, blowdown tanks, concentrators, blend tanks, etc. with a gas boiler (B001) or a coal boiler (B008) as control	OAC rule 3745-21-07(G)(2)	85 percent overall control efficiency for organic compounds (OC)
	OAC rule 3745-21-07(G)(6)	90 percent destruction of OC
	40 CFR Part 63, Subpart U	See A.III below.

2. Additional Terms and Conditions

- 2.a The following unit operations emit OC and are subject to OAC rule 3745-21-07(G)(2) and 40 CFR Part 63, Subpart U: the reactors, the blowdown tank, the thin-film evaporation, the vacuum jets, and the foam knockdown tank which are vented to either the coal fired boiler (B008) or the natural gas fired boiler (B001) and the associated piping (i.e., connectors, flanges, pumps, etc.).

II. Operational Restrictions

1. The daily average temperature in the firebox of the boiler shall not be below the minimum temperature established during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record Keeping Requirements

1. Each piece of equipment in a process unit to which 40 CFR Part 63, Subpart H 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 2.** When each leak is detected as specified in sections A.III.3.a and A.III.4.f; sections A.III.8.b and A.III.9.a; and sections A.III.12.g, A.III.13.a, and A.III.14.b of these terms and conditions, the following requirements apply:
 - a.** A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - b.** The identification on a valve may be removed after it has been monitored as specified in sections A.III.8.j and A.III.17.g.i.(d) of these terms and conditions, and no leak has been detected during the follow-up monitoring. If the permittee elects to comply using the provisions of section A.III.14.d.i of these terms and conditions, the identification on a connector may be removed after it is monitored as specified in section A.III.14.d.i of these terms and conditions and no leak is detected during that monitoring.
 - c.** 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 A.III.14.d.i of these terms and conditions, may be removed after it has been repaired.
- 3.** The permittee shall monitor each pump in light liquid service monthly to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions and shall comply with the following requirements:
 - 3.a** The instrument reading for pumps in light liquid service, as determined by the method as specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, that defines a leak in each phase of the standard is:
 - i.** for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii.** for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 5,000 parts per million or greater; and
 - iii.** for Phase III beginning January 30, 2000, an instrument reading of 5,000 parts per million or greater for pumps handling polymerizing monomers and an instrument reading of 1,000 parts per million or greater for all other pumps.
 - 3.b** Each pump in light liquid service 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.
 - 3.c** 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 A.III.11 of these terms and conditions.
 - 3.d** A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - 3.e** For pumps in light liquid service, the first attempts at repair shall include, but are not limited to, the following practices where practicable:
 - i.** tightening of packing gland nuts; and
 - ii.** ensuring that the seal flush is operating at design pressure and temperature.
 - 3.f** The permittee 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 permittee has decided, all subsequent percent calculations shall be made on the same basis.

III. Monitoring and/or Record Keeping Requirements (continued)

- 3.g** If, in Phase III, calculated on a rolling, 6-month average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the permittee shall implement a quality improvement program for pumps that complies with the requirements of sections A.III.18, A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
- 3.h** 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.
- 3.i** 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 sections A.III.3 and A.III.3a of these terms and conditions;

PT = total pumps in organic HAP service, including those meeting the criteria in sections 63.163(e) and 63.163(f) of 40 CFR Part 63, Subpart H; and

PS = number of pumps leaking within 1 month of start-up during the current monitoring period.

- 4.** 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.
- 4.a** Each compressor seal system as required in section A.III.4 of these terms and condition shall be:
- i. operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. 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 sections A.III.12 and A.III.12.a through A.III.12.k; or
 - iii. equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- 4.b** The barrier fluid shall not be in light liquid service.
- 4.c** Each barrier fluid system as described in sections A.III.4, A.III.4.a, and A.III.4.b of these terms and conditions shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- 4.d** Each sensor as required in section A.III.4.c of these terms and conditions shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- 4.e** The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 4.f** If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under section A.III.4.e of these terms and conditions, a leak is detected.
- 4.g** 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 A.III.11 of these terms and conditions.
- 4.h** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

5. 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 below, as measured by the method specified in section A.V.2 of these terms and conditions.
 - a. 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 A.III.11 of these terms and conditions.
 - b. 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 A.V.2 of these terms and conditions.
6. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured. Each closed-purge, closed-loop, or closed-vent system shall:
 - a. return the purged process fluid directly to the process line; or
 - b. collect and recycle the purged process fluid to a process; or
 - c. be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of sections A.III.12 and A.III.12.a through A.III.12k; or
 - d. collect, store, and transport the purged process fluid to a system or facility identified below:
 - i. a waste management unit as defined in section 63.111 of 40 CFR Part 63, Subpart G, 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 (If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR Part 63, Subpart G, 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.); or
 - 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.
7. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - 7.a 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.
 - 7.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.
 - 7.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 sections A.III.7.a and A.III.7.b of these terms and conditions at all other times.
8. The permittee shall monitor all valves that are either in gas service or in light liquid service at the intervals specified in sections A.III.8.c and A.III.8.d of these terms and conditions and shall comply with the following requirements:
 - 8.a The valves shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.b** The instrument reading that defines a leak in a valve in each phase of the standard is:
- i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 500 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 500 parts per million or greater.
- 8.c** In Phases I and II, each valve shall be monitored quarterly.
- 8.d** In Phase III, the permittee shall monitor valves for leaks at the intervals specified below:
- i. At process units with 2 percent or greater leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, the permittee shall either:
 - (a) monitor each valve once per month; or
 - (b) within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and monitor quarterly.
 - ii. At process units with less than 2 percent leaking valves, the permittee shall monitor each valve once each quarter, except as provided in paragraphs (iii) and (iv) below.
 - iii. At process units with less than 1 percent leaking valves, the permittee may elect to monitor each valve once every 2 quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the permittee may elect to monitor each valve once every 4 quarters.
- 8.e** 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 sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions;
- VL = number of valves found leaking, excluding nonrepairables as provided in section A.III.8.g of these terms and conditions;
- VT = total valves monitored in a monitoring period, excluding valves monitored as required by section A.III.8.j of these terms and conditions; and
- VC = optional credit for removed valves = $0.67 \times$ 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 $VC = 0$).
- 8.f** For use in determining monitoring frequency, as specified in section A.III.8.d of these terms and conditions, 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.g** 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 (ii) below. 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.
- 8.h** 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 A.III.11 of these terms and conditions.
- 8.i** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 8.j** 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 sections A.V.1 and A.V.1.a through A.V.1.f and section A.V.2, as appropriate, to determine whether the valve has resumed leaking.
- ii. Periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions may be used to satisfy the requirements of this section, if the timing of the monitoring period coincides with the time specified in this section. Alternatively, other monitoring may be performed to satisfy the requirements of this section, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this section.
- iii. If a leak is detected by monitoring that is conducted pursuant to this section, the permittee shall follow the provisions of paragraphs (a) and (b) below, to determine whether that valve must be counted as a leaking valve for purposes of sections A.III.8.e through A.III.8.g of these terms and conditions.
- (a) If the permittee elected to use periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions to satisfy the requirements of this section, then the valve shall be counted as a leaking valve.
- (b) If the permittee elected to use other monitoring, prior to the periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions, to satisfy the requirements 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.
- 8.k** First attempts at repair include, but are not limited to, the following 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.
- 9.** 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 by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions within 5 calendar days if evidence is found of a potential leak to the atmosphere by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in sections A.III.9.b and A.III.9.c of these terms and conditions, it is not necessary to monitor the system for leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 9.a** 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 or pumps subject to section A.III.3.a.iii.(c), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- 9.b**
- i. 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 A.III.11 of these terms and conditions.
 - ii. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - iii. For equipment identified in section A.III.9 of these terms and conditions that is not monitored by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, 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.
- 9.c** First attempts at repair include, but are not limited to, the practices described under sections A.III.3.d through A.III.3.e and section A.III.8.k of these terms and conditions, for pumps and valves, respectively.
- 10.** No later than September 5, 1999, 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 40 CFR Part 63, Subpart H 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 sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions or shall comply with the requirements of sections 63.119(b) or (c) of 40 CFR Part 63, Subpart G.
- 11.**
- a. Delay of repair of equipment for which leaks have been detected is allowed if the repair 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:
 - i. the permittee 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
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions.
 - d. Delay of repair for pumps is also allowed if:
 - i. repair requires replacing the existing seal design with a new system that the permittee has determined under the provisions of sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions will provide better performance: or
 - (a) a dual mechanical seal system that meets the requirements of section 63.163(e) of 40 CFR Part 63, Subpart H;
 - (b) a pump that meets the requirements of section 63.163(f) of 40 CFR Part 63, Subpart H; or
 - (c) a closed-vent system and control device that meets the requirements of section 63.163(g) of 40 CFR Part 63, Subpart H; and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

III. Monitoring and/or Record Keeping Requirements (continued)

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.

- 12.** Closed-vent systems and control devices used to comply with provisions of 40 CFR Part 63, Subpart H shall comply with the following:
- 12.a** 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 per 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 of 40 CFR Part 63, Subpart H.
- 12.b** 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 second at a minimum temperature of 760 degrees Celsius.
- 12.c** Flares used to comply with 40 CFR Part 63, Subpart H shall comply with the requirements of section 63.11(b) of 40 CFR Part 63, Subpart A.
- 12.d** Control devices that are used to comply with the provisions of 40 CFR Part 63, Subpart H shall be monitored to ensure that the control devices are operated and maintained in conformance with their design.
- 12.e** Each closed-vent system shall be inspected according to the procedures and schedule specified below:
- i. If the closed-vent system is constructed of hard-piping, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - ii. If the vapor collection system or closed-vent system is constructed of duct work, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual inspections according to the procedures in section A.III.12.f of these terms and conditions.
- 12.f** Each closed-vent system shall be inspected according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 12.g** 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 section A.III.12.h of these terms and conditions.
- i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - ii. Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in section A.III.12.h of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 12.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 permittee 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 completed by the end of the next process unit shutdown.
- 12.i** 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 permittee shall comply with either paragraph (i) or (ii) below, except as provided in paragraph (iii) below.
- i. 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 40 CFR Part 63, Subpart G. The flow indicator shall be installed at the entrance to any bypass line; or
- ii. 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.
- iii. 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.
- 12.j** Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of 40 CFR Part 63, Subpart H, such system or control device shall be operating.
- 12.k** The permittee of any control device subject to 40 CFR Part 63, Subpart H that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 63, Subpart H, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart H. The permittee shall identify which option has been chosen, in the next periodic report required by section A.IV.3 of these terms and conditions.
- 13.** Each agitator in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 13.a** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- 13.b** i. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
- ii. If there are indications of liquids dripping from the agitator, a leak is detected.
- 13.c** i. 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 A.III.11 of these terms and conditions.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 14.** The permittee shall monitor all connectors in gas/vapor and light liquid service at the intervals specified in section A.III.14.c of these terms and conditions.
- 14.a** The connectors shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 14.b** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.c The permittee shall monitor for leaks at the intervals specified in either paragraph (i) or (ii) and in paragraph (iii) below:

- i. For each group of existing process units within an existing source, by no later than January 31, 1998, the permittee shall monitor all connectors.
- ii. For new sources, within the first 12 months after initial start-up or January 31, 1998, whichever is later, the permittee shall monitor all connectors.
- iii. After conducting the initial survey required in paragraph (i) or (ii) above, the permittee shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (a) through (e) below, except as provided in section A.III.14.e of these terms and conditions:
 - (a) 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.
 - (b) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The permittee 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.
 - (c) If the permittee 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 permittee may monitor the connectors one time every 4 years. The permittee 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.
 - (d) If a process unit complying with the requirements 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 permittee shall increase the monitoring frequency to one time every 2 years. The permittee 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 permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.
 - (e) If a process unit complying with requirements of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the permittee shall increase the monitoring frequency to one time per year. The permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.

The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.d** i. Except as provided in paragraph (ii) below, 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 section A.III.14.f of these terms and conditions, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of section A.III.14.g.ii of these terms and conditions.
- ii. As an alternative to the requirements in paragraph (i) above, a permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the permittee may not count nonrepairable connectors for the purposes of section A.III.14.g.ii of these terms and conditions. The permittee shall calculate the percent leaking connectors for the monitoring periods described in section A.III.14.c, by setting the nonrepairable component, CAN, in the equation in section A.III.14.g.ii to zero for all monitoring periods.
- iii. A permittee may switch alternatives described in paragraphs (i) and (ii) above at the end of the current monitoring period, provided that it is reported as required in sections A.IV.1 through A.IV.3 of these terms and conditions 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.
- 14.e** As an alternative to the requirements for sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) of these terms and conditions, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before September 5, 1996 may:
- i. comply with the requirements of section A.III.9 and A.III.9 .a through A.III.9.c of these terms and conditions; and
- ii. be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutant 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 section A.III.14.f of these terms and conditions.
- 14.f** 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 63.174(g) of 40 CFR Part 63, Subpart H and in section A.III.11 of these terms and conditions. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.g For use in determining the monitoring frequency, as specified in section A.III.14.c, the percent leaking connectors shall be calculated as specified in paragraphs (i) and (ii) below:

(i) For the first monitoring period, use the following equation:

$$\% \text{ CL} = \text{CL}/(\text{Ct} + \text{CC}) \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

Ct = total number of monitored connectors in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

(ii) For subsequent monitoring periods, use the following equation:

$$\% \text{ CL} = [(\text{CL} - \text{CAN})/(\text{Ct} + \text{CC})] \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

CAN = number of allowable nonrepairable connectors, as determined by monitoring required in sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) and sections A.III.14.d through A.III.14.e of these terms and conditions, not to exceed 2 percent of the total connector population, Ct;

Ct = total number of monitored connectors, including nonrepairables, in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.h** Optional credit for removed connectors. If the permittee eliminates a connector subject to monitoring under section A.III.14.c of these terms and conditions, the permittee may receive credit for elimination of the connector, as described in section A.III.14.g of these terms and conditions, provided the requirements in paragraphs (i) through (iv) below are met.
- (i) The connector was welded after July 31, 1997.
 - (ii) The integrity of the weld is demonstrated by monitoring it according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.
 - (iii) Welds created after June 12, 1995 to September 4, 1996 shall be monitored or tested by October 31, 1997.
 - (iv) Welds created after September 5, 1996 shall be monitored or tested within 3 months after being welded.
 - (v) 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 40 CFR Part 63, Subpart H.
- 15.**
- a. In Phase III, the permittee may elect to comply with one of the alternative quality improvement programs specified in sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. The decision to use one of these alternative provisions to comply with the requirements of section A.III.8.d.i.(b) of these terms and conditions must be made during the first year of Phase III for existing process units and for new process units.
 - b. The permittee of a process unit subject to the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions 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 sections A.III.8.e through A.III.8.g of these terms and conditions.
 - c. After the process unit has fewer than 2 percent leaking valves, the permittee may elect to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, to continue to comply with the requirements in section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, or comply with both the requirements.
 - i. If the permittee elects to continue the quality improvement program, the permittee is exempt from the requirements for performance trials as specified in section A.III.17.f of these terms and conditions, or further progress as specified in section A.III.16.d of these terms and conditions, as long as the process unit has fewer than 2 percent leaking valves calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions.
 - ii. If the permittee elects to comply with both sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in sections A.III.8.d.ii, A.III.8.d.iii and A.III.8.d.iv of these terms and conditions.
 - iii. If the permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

16. A permittee who elects to use a quality improvement program to demonstrate further progress shall meet the following requirements:
- a. The permittee shall continue to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except each valve shall be monitored quarterly.
 - b. The permittee shall collect the following data, and maintain records as required in section A.III.26.a of these terms and conditions, 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; and
 - iii. if a leak is detected, the repair methods used and the instrument readings after repair.
 - c. The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
 - d. The permittee must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of this section, except as provided in paragraphs (ii) and (iii) below.
 - 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:

$$\%LVR = (\%LVAVG1 - \%LVAVG2 / \%LVAVG1) \times 100$$

where:

$\%LVR$ = percent leaking valve reduction;

$\%LVAVG1 = (\%VLi + \%VLi+1)/2$; and

$\%LVAVG2 = (\%VLi+1 + \%VLi+2)/2$;

III. Monitoring and/or Record Keeping Requirements (continued)

where:

%V_{Li}, %V_{Li+1}, %V_{Li+2} are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

ii. A permittee 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 A.III.8.d.i.(a) of these terms and conditions using monthly monitoring or shall comply using a quality improvement program for technology review as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. If the permittee elects to comply with the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, the schedule for performance trials and valve replacements remains as specified in section A.III.17 of these terms and conditions.

iii. As an alternative to the provisions in paragraph (i) above, a permittee may use the procedure specified in paragraphs (a) and (b) below 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 = percent reduction required each quarter, as calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions; and

%VL = percent leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, at the time elected to use provisions of section A.III.8.d.i.(b) of these terms and conditions.

(b) The permittee shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section A.III.16 of these terms and conditions.

- 17.** A permittee who elects to use a quality improvement program for technology review and improvement shall meet the following requirements:
- 17.a** The permittee shall comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except the requirement for monthly monitoring in A.III.8.d.i.(a) of these terms and conditions does not apply.
- 17.b** The permittee shall collect the data specified below, and maintain records as required in section A.III.26.b of these terms and conditions, 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; and
 - 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.c** The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- 17.d** The permittee 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.
- 17.e**
- i. The permittee shall analyze the data collected to comply with the requirements of section A.III.17.b of these terms and conditions 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 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 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

17.g Each permittee 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 section A.III.17.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.17.f of these terms and conditions, 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 permittee of the process unit, by the vendor, or by a designated representative. The permittee 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 sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions 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 permittee 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.

18. a. In Phase III, if, on a rolling, 6-month 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 permittee shall comply with the requirements in sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.

b. The permittee 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 rolling, 6-month average, in the process unit (or plant site). Once the performance level is achieved, the permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

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 rolling, 6-month average, the permittee shall resume the quality improvement program starting at performance trials.

III. Monitoring and/or Record Keeping Requirements (continued)

d. 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 (ii) below.

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.

19. The quality improvement program for pumps shall include the following:

19.a The permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

19.b The permittee shall collect the following data, and maintain records as required in section A.III.26.c of these terms and conditions, 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; and

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.

19.c The permittee shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

19.d The permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.e** i. The permittee shall analyze the data collected to comply with the requirements of section A.III.19.b of these terms and conditions 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.

III. Monitoring and/or Record Keeping Requirements (continued)

19.f 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.

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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.g** Each permittee 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 section A.III.19.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.19.f of these terms and conditions, 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 permittee 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.
- 20.** If more than one process unit is subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the recordkeeping requirements for these process units in one recordkeeping 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.
- 21.** The permittee shall have recorded the following information pertaining to all equipment in each process unit subject to the requirements in sections A.III.1 through A.III.12 of these terms and conditions:
- 21.a** A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in section 63.174 of 40 CFR Part 63, Subpart H and instrumentation systems) subject to the requirements of 40 CFR Part 63, Subpart H. 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 A.III.14.c.i or A.III.14.c.ii of these terms and conditions.
 - 21.b** A schedule by process unit for monitoring connectors subject to section A.III.14 of these terms and conditions and valves subject to section A.III.8 of these terms and conditions.
 - 21.c** Equipment subject to the provisions of this subpart shall be identified on a plant site plan, in log entries, or by other appropriate methods. Physical tagging of the equipment to indicate that it is in organic HAP service is not required.

III. Monitoring and/or Record Keeping Requirements (continued)

- 21.d** A list of identification numbers for equipment that the permittee elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), 63.164(h), 63.165(c), or 63.173(f) of 40 CFR Part 63, Subpart H.
- 21.e** A list of identification numbers for compressors that the permittee 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 40 CFR Part 63, Subpart H.
- 21.f** Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the permittee elects to equip with a closed-vent system and control device, under the provisions of section A.III.10 of these terms and conditions.
- 21.g** A list of identification numbers for pressure relief devices subject to section A.III.5 of these terms and conditions.
- 21.h** A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of 40 CFR Part 63, Subpart H.
- 21.i** Identification of instrumentation systems subject to the provisions of 40 CFR Part 63, Subpart H. Individual components in an instrumentation system need not be identified.
- 21.j** Identification of screwed connectors subject to the requirements of section A.III.14.e of these terms and conditions. Identification can be by area or grouping as long as the total number within each group or area is recorded.
- 21.k** 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 40 CFR Part 63, Subpart H and an explanation of the design criteria; and
 - ii. any changes to these criteria and the reasons for the changes.
- 21.l** The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of sections 63.168(h) and (i) of 40 CFR Part 63, Subpart H, agitators subject to the provisions of sections 63.173(h) through (j), and connectors subject to the provisions of sections 63.174(f) and (g) of 40 CFR Part 63, Subpart H 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; and
 - 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.
- 21.m** A list of valves removed from and added to the process unit, as described in section A.III.8.e of these terms and conditions, if the net credits for removed valves is expected to be used.
- 21.n** A list of connectors removed from and added to the process unit, as described in section A.III.14.g.(i) of these terms and conditions, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of 40 CFR Part 63, Subpart H. This is not required unless the net credits for removed connectors is expected to be used.
- 22.** For visual inspections of equipment subject to the provisions of this 40 CFR Part 63, Subpart H, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions for leaking equipment identified in this inspection. These records shall be retained for 2 years.

III. Monitoring and/or Record Keeping Requirements (continued)

- 23.** 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 40 CFR Part 63, Subpart H, the following information shall be recorded and kept for 2 years:
- 23.a** The instrument and the equipment identification number and the operator name, initials, or identification number.
 - 23.b** The date the leak was detected and the date of the first attempt to repair the leak.
 - 23.c** The date of successful repair of the leak.
 - 23.d** Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.
 - 23.e** "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 permittee 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) of 40 CFR Part 63, Subpart A, 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.
 - 23.f** Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - 23.g** 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 A.III.14.c of these terms and conditions, as described in section A.III.14.d of these terms and conditions, unless the permittee elects to comply with the provisions of section A.III.14.d.ii of these terms and conditions.
 - 23.h** The date and results of monitoring as required in sections A.III.14.d through A.III.14.e of these terms and conditions. If identification of connectors that have been opened or otherwise had the seal broken is made by location under section A.III.23.g of these terms and conditions, then all connectors within the designated location shall be monitored.
 - 23.i** Copies of the periodic reports as specified in section A.IV.3 of these terms and conditions, if records are not maintained on a computerized database capable of generating summary reports from the records.
- 24.** The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) of 40 CFR Part 63, Subpart H and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in section A.III.5 of these terms and conditions. The results shall include:
- a. the background level measured during each compliance test; and
 - b. the maximum instrument reading measured at each piece of equipment during each compliance test.

III. Monitoring and/or Record Keeping Requirements (continued)

- 25.** The permittee shall maintain records of the information specified below for closed-vent systems and control devices. The records specified in paragraph (a) below shall be retained for the life of the equipment. The records specified in paragraphs (b) and (c) below shall be retained for 2 years.
- a. The design specifications and performance demonstrations specified below:
 - 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 40 CFR Part 63; and
 - iv. a description of the parameter or parameters monitored, as required in section A.III.12.d of these terms and conditions, 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.
 - b. Records of operation of closed-vent systems and control devices, as specified below:
 - i. dates and durations when the closed-vent systems and control devices 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; and
 - iii. dates and durations of start-ups and shutdowns of control devices.
 - c. Records of inspections of closed-vent systems as specified below:
 - i. for each inspection conducted 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; and
 - ii. for each inspection conducted during which leaks were detected, the information specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions shall be recorded.
- 26.** Each permittee of a process unit subject to the requirements of sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.h of these terms and conditions shall maintain the records specified in sections A.III.26.a through A.III.26.i of these terms and conditions for the period of the quality improvement program for the process unit.
- 26.a** For permittees who elect to use a reasonable further progress quality improvement program, as specified in section A.III.16 of these terms and conditions:
- i. all data required in section A.III.16.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter; and
 - iii. the beginning and ending dates while meeting the requirements of section A.III.16 of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.b** For permittees who elect to use a quality improvement program of technology review and improvement, as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions:
- i. all data required in section A.III.17.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter;
 - iii. documentation of all inspections conducted under the requirements of section A.III.17.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions.
- 26.c** For permittees subject to the requirements of the pump quality improvement program as specified in sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions:
- i. all data required in section A.III.19.b of these terms and conditions;
 - ii. the rolling average percent leaking pumps;
 - iii. documentation of all inspections conducted under the requirements of section A.III.19.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions.
- 26.d** 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.
- 26.e** Records of all analyses required in sections A.III.17 and A.III.17.a through A.III.17.g and A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions. The records shall 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 A.III.17.f.iii and A.III.19.f.iii of these terms and conditions; and
 - iv. the beginning date and duration of performance trials of each candidate superior emission performing technology.
- 26.f** All records documenting the quality assurance program for valves or pumps as specified in sections A.III.17.g and A.III.19.g of these terms and conditions.
- 26.g** 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 sections A.III.17.g and A.III.19.g of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.h** Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) below:
- i. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) of this section.
- (a) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (b) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (c) 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.
- 26.i** 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 Sec. 63.160 of 40 CFR Part 63, Subpart H.
- 27.** The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature in the firebox of the boiler when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
- The permittee shall collect and record the following information for each day:
- a. The daily average temperature in the firebox of the boiler.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

IV. Reporting Requirements

- 1.** Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit the reports listed in paragraphs (a) and (b) below:
- (a) a 'Notification of Compliance Status' report described in section A.IV.2 of these terms and conditions; and
 - (b) periodic reports described in section A.IV.3 of these terms and conditions.

IV. Reporting Requirements (continued)

2. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit a Notification of Compliance Status by December 28, 1997. The notification shall provide the information listed below in paragraphs (a) through (d) for each process unit subject to the requirements of sections 63.163 through Sec. 63.174 of 40 CFR Part 63, Subpart H:
 - a. process unit identification;
 - b. number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service;
 - c. method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and
 - d. planned schedule for each phase of the requirements in sections A.III.3.a and A.III.8.b of these terms and conditions.

3. The permittee of a source subject to this subpart shall submit periodic reports on a semi-annual basis, covering the periods from January 1 through June 30 and July 1 through December 31 of each year. The report shall contain the information in paragraphs (a) and (b) below and shall be submitted semiannually starting 6 months after December 28, 1997. The first periodic report shall cover the first 6 months after December 28, 1997. Each subsequent periodic report shall cover the 6-month period following the preceding period.
 - a. For each process unit complying with the provisions of sections 63.163 through 63.174 of 40 CFR Part 63, Subpart H, the summary information listed in paragraphs (i) through (v) below for each monitoring period during the 6-month period shall be submitted:
 - i. the number of valves for which leaks were detected as described in sections A.III.8 and A.III.8.a through A.III.8.b of these terms and conditions, the percent leakers, and the total number of valves monitored;
 - ii. the number of valves for which leaks were not repaired as required in sections A.III.8.h through A.III.8.k of these terms and conditions, identifying the number of those that are determined nonreparable;
 - iii. the number of pumps for which leaks were detected as described in sections A.III.3 and A.III.3.a through A.III.3.b of these terms and conditions, the percent leakers, and the total number of pumps monitored;
 - iv. the number of pumps for which leaks were not repaired as required in sections A.III.3.c through A.III.3.e of these terms and conditions;
 - v. the number of compressors for which leaks were detected as described in section A.III.4.f of these terms and conditions;

IV. Reporting Requirements (continued)

- vi. the number of compressors for which leaks were not repaired as required in sections A.III.4.g through A.III.4.h of these terms and conditions;
 - vii. the number of agitators for which leaks were detected as described in sections A.III.13 and A.III.13.a through A.III.13.b of these terms and conditions;
 - viii. the number of agitators for which leaks were not repaired as required in section A.III.13.c of these terms and conditions;
 - ix. the number of connectors for which leaks were detected as described in sections A.III.14 and A.III.14.a through A.III.14.b of these terms and conditions, the percent of connectors leaking, and the total number of connectors monitored;
 - x. the number of connectors for which leaks were not repaired as required in section A.III.14.f of these terms and conditions, identifying the number of those that are determined nonreparable;
 - xi. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible;
 - xii. the results of all monitoring to show compliance with section 63.164(i) of 40 CFR Part 63, Subpart H, section A.III.5 of these terms and conditions, and section A.III.12.e of these terms and conditions conducted within the semiannual reporting period;
 - xiii. if applicable, the initiation of a monthly monitoring program under section A.III.8.d.i.(a) of these terms and conditions, or a quality improvement program under either sections A.III.16 or A.III.17 and A.III.17.a through A.III.17.g;
 - xiv. if applicable, notification of a change in connector monitoring alternatives as described in section A.III.14.d of these terms and conditions; and
 - xv. if applicable, the compliance option that has been selected under section A.III.12.k of these terms and conditions.
- b. The information listed in section A.IV.2 of these terms and conditions for the Notification of Compliance Status for process units with later compliance dates shall be submitted, in addition to any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

Starting February 2, 2000, the periodic reports shall be submitted as part of the periodic reports required by paragraph 63.506(e)(6) of 40 CFR Part 63, Subpart U.

- 4. The permittee shall submit deviation (excursion) reports which identify all days which the daily average temperature in the firebox of the boiler does not comply with the temperature limitation specified above.

V. Testing Requirements

- 1. Monitoring, as required under 40 CFR Part 63, Subpart H, shall comply with the following requirements:
 - 1.a Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

- 1.b** i. Except as provided for in paragraph (ii) below, 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 (i) above, 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 (i) above.
- 1.c** 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.
- 1.d** 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 (a) through (c) below. 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 A.V.1.b.i of these terms and conditions. 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, in 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 (iii) below.
- (c) For Phase III, a mixture of methane or other compounds, as applicable, in air, at a concentration of approximately, but less than, 10,000 parts per million methane for agitators, 5,000 parts per million for pumps in polymerizing monomer service, and 500 parts per million for all other equipment, except as provided in paragraph (iii) below.
- 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 permittee need not calibrate the scales that will not be used during that day's monitoring.
- 1.e** 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.

V. Testing Requirements (continued)

- 1.f** Monitoring data that do not meet the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions may be used to qualify for less frequent monitoring under the provisions in sections A.III.8.d.ii and A.III.8.d.iii of these terms and conditions or sections A.III.14.c.iii.(b) or A.III.14.c.iii.(c) of these terms and conditions provided the data meet the conditions specified in paragraphs (i) and (ii) below.
- i. The data were obtained before April 22, 1994.
 - ii. The departures from the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions or from the specified monitoring frequency of section A.III.8.c of these terms and conditions 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 section A.V.1.b of these terms and conditions, 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.
- 2.** When equipment is monitored for compliance as required in sections 63.164(i) of 40 CFR Part 63, Subpart H, A.III.15 of these terms and conditions, and A.III.12.i of these terms and conditions or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by 40 CFR Part 63, Subpart H, the permittee may elect to adjust or not to adjust the instrument readings for background. If a permittee elects to not adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in sections A.V.1.a through A.V.1.d of these terms and conditions. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If a permittee elects to adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in paragraphs (a) through (d) below.
- a. The requirements of sections A.V.1.a through A.V.1.d of these terms and conditions shall apply.
 - b. The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - c. 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.
 - d. 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.

V. Testing Requirements (continued)

3.
 - a. 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 a permittee 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.
 - b. A permittee may use good engineering judgment rather than the procedures in paragraph (a) above to determine that the percent organic HAP content does not exceed 5 percent by weight. When a permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (a) above shall be used to resolve the disagreement.
 - c. Conversely, the permittee 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.
 - d. If a permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (a) above, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.
 - e. Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.
4. When a flare is used to comply with section A.III.12.c of these terms and conditions, the compliance determination shall be conducted using Method 22 of 40 CFR Part 60, Appendix A to determine visible emissions.
5. The permittee shall conduct, or have conducted, emission testing for the coal fired boiler (B008) and the natural gas fired boiler (B001) which are employed as control equipment for this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 54 months after issuance of the permit.
 - b. The emission testing shall be conducted to demonstrate compliance with the overall control efficiency* and destruction efficiency.
 - c. The test method(s) which must be employed to demonstrate compliance with the overall control efficiency and destruction efficiency are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
 - 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 OAC rule 3745-21-10. 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.
 - e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

*No capture testing is required because this emissions unit is a closed system with 100% capture efficiency.

V. Testing Requirements (continued)

6. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
7. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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
8. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
9. Compliance with the emission limitations in section A.1.2.a of these terms and conditions shall be determined in accordance with the following method:
 - 9.a Emission Limitation:

85 percent overall reduction in emissions

90 percent destruction of OC

Applicable Compliance Method:

Compliance shall be demonstrated using the test method(s) and procedures as required in Sections A.V.5 through A.V.8 of these terms and conditions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: DEPA (P012)

Activity Description: DEPA - Organic Rubber Chemical - reactor, wash tank, feed tank, filter

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
DEPA organic rubber chemical - reactor, wash tank, feed tank, filter with no controls	OAC rule 3745-21-07(G)(2)	See A.I.2.a below.

2. Additional Terms and Conditions

- 2.a The permittee shall not discharge more than forty pounds of organic material into the atmosphere in any one day, nor more than eight pounds in any one hour, from any article, machine, equipment, or other contrivance for employing, applying, evaporating or drying any photochemically reactive material, or substance containing such photochemically reactive material.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information for each month:
 - a. the total amount of raw materials employed, in pounds;
 - b. the total amount of product produced, in pounds;
 - c. the organic compound (OC) emission rate, in pounds per month (i.e., (a) minus (b));
 - d. the total number of days the emissions unit was in operation;
 - e. the total number of hours the emissions unit was in operation;
 - f. the average daily OC emission rate, in pounds per day (average) (i.e., (c)/(d)); and
 - g. the average hourly OC emission rate, in pounds per hour (average) (i.e., (c)/(e)).

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which include the following information:
 - a. an identification of each month during which the average hourly organic compound emissions from the emissions unit exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such month; and
 - b. an identification of each month during which the average daily organic compound emissions from the emissions unit exceeded 40 pounds per day, and the actual average daily organic compound emissions for each such month.
2. The deviation 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.2.a of these terms and conditions shall be determined in accordance with the following methods:
 - 1.a Emission Limitation:

8.0 lbs/hr of organic compounds and 40.0 lbs/day of organic compounds

Applicable Compliance Method:

Compliance shall be demonstrated using the record keeping as required in section A.III.1 of these terms and conditions. Stack testing may be required in the future in accordance with the procedures and test method(s) in OAC rule 3745-21-10(C).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: DPA A/O (P016)

Activity Description: DPA A/O - Petroleum Additives & Rubber Antioxidants - reactors, washers, stills, filter, recovery equipment

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
DPA A/O - reactors, washers, stills, recovery equipment with two condensers, a carbon adsorber, and a dust collector as control	OAC rule 3745-31-05 (PTI 16-1843)	2.0 lbs/hr of volatile organic compounds (VOC)
		8.8 tpy of VOC
	OAC rule 3745-21-09(BBB)	See A.I.2.b below.

2. Additional Terms and Conditions

- 2.a The following unit operations emit VOC: the north and south recovered hydrocarbon feed tanks; the north and south hydrocarbon feed tanks; the north and south reactors; the north and south receivers; MND tank; the north and south weigh tanks; the north and south wash tanks; the north and south strippers; the north and south crude storage tanks; the north and south stills; the recovered DPA tank; the north and south tars; the gel churn; the north and south vent tanks; the effluent tank, the hold tanks; and the jets which are vented either to the north or south condenser or to the carbon adsorber; and the associated piping (i.e., connectors, flanges, pumps, etc.).
- 2.b For the diphenylamine-based antioxidants process, the VOC emissions from the reactor process vent streams, except the emulsion recovery system tank vent, recovered MND tank vent, and process emergency safety relief devices, shall be vented to a control device that is designed and operated to achieve a control efficiency of at least ninety-five percent, by weight, as determined under OAC rule 3745-21-10(C).

II. Operational Restrictions

1. The average temperature of the exhaust gases from the north and south condensers, for any 3-hour block of time, shall not be more than 93.2 degrees Fahrenheit and 112.9 degrees Fahrenheit, respectively, or 11 degrees Fahrenheit above the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The average VOC concentration in the exhaust gases from the carbon adsorber, for any 3-hour block of time, shall not exceed a VOC concentration (ppm) which is 20 percent greater than the average concentration during the most recent emission test that demonstrated the emissions unit was in compliance. (A VOC concentration that exceeds 20 percent of the average concentration during the most recent emissions test is not necessarily indicative of a violation of the allowable mass emission limitation and control requirement (2.0 lbs/hr VOC and 95% control efficiency) but rather serves as a trigger level for maintenance and/or repair activities, or further investigation to establish correct operation.

II. Operational Restrictions (continued)

3. When product 961 is being manufactured, the exhaust gas stream(s) shall be diverted directly to the carbon adsorber control system.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from each condenser when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. Each temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day:

- a. all 3-hour blocks of time during which the average exhaust gas temperature of any condenser, when the emissions unit was in operation, is greater than the appropriate temperatures in section A.II.1 or more than 11 degrees Fahrenheit above the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
 - b. a log of the downtime for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. The permittee shall operate and maintain a continuous organic monitoring device and recorder which measures and records the VOC concentrations in the exhaust gases from the carbon adsorber when the emissions unit is in operation and is manufacturing product 961. The organic monitoring device and recorder shall be capable of satisfying the performance requirements specified in 40 CFR Part 60, Appendix B, Performance Specification 8 or Performance Specification 9. Prior to any compliance demonstration, the permittee shall demonstrate that the organic monitoring device and recorder satisfy the requirements of Performance Specification 8 or Performance Specification 9. The organic monitoring device and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day:

- a. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation; and
 - b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average VOC concentration in the exhaust gases was more than 20 percent greater than the average concentration during the most recent performance test that demonstrated the emissions unit was in compliance.
3. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous volatile organic compound monitoring system designed to ensure continuous valid and representative readings of volatile organic compound. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous volatile organic compound monitoring system must be kept on site and available for inspection during regular office hours.

IV. Reporting Requirements

1. The permittee shall submit temperature deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of the exhaust gases from any condenser exceeded the temperature limitations specified above.
2. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time (when the emissions unit was in operation) during which the average VOC concentration of the exhaust gases from the carbon adsorber exceeded the concentration limitation specified above.

IV. Reporting Requirements (continued)

3. The deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition 3 of this permit.
4. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit along with calculations for the previous calendar year. These reports shall be submitted by January 31 of each year.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the VOC emissions from product 961 which are vented to the carbon adsorber control system associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 6 months after the startup of the modification to this emissions unit.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for VOC and control efficiency limitation for VOC.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC Method 18 of 40 CFR Part 60, Appendix A (Note: For future demonstrations of compliance with the VOC limitations, Method 25 or 25A of 40 CFR Part 60, Appendix A shall be used). The test method(s) which must be employed to demonstrate compliance with the control efficiency limitations for VOC are specified below.
 - 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 OAC rule 3745-21-10. 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.
 - e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
2. The permittee shall conduct, or have conducted, emission testing for the north and south condensers associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 6 months prior to permit renewal.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for VOC and control efficiency limitation for VOC.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC Method 25 or 25A of 40 CFR Part 60, Appendix A. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitations for VOC are specified below.
 - 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 OAC rule 3745-21-10. 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.
 - e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

- 3.** Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
- 4.** Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.
- 5.** A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
- 6.** Compliance with the emission limitation in section A.I.2.a of these terms and conditions shall be determined in accordance with the following methods:
 - 6.a** Emission Limitation:

a control efficiency of at least ninety-five per cent, by weight

Applicable Compliance Method:

Compliance with the allowable control efficiency limitation for VOC shall be determined using Methods 1-4 and 18 of 40 CFR Part 60, Appendix A as required in Sections A.V.1 through A.V.5 of these terms and conditions.
 - 6.b** Emission Limitation:

2.0 lbs/hr of VOC fugitive and stack emissions

Applicable Compliance Method:

Compliance with the allowable mass emission rate for VOC shall be determined using Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions plus the VOC emission rate, in lbs/hr, determined from EPA-453/R-95-017 "Protocol for Equipment Leak Emission Estimates" for fugitive emissions.
 - 6.c** Emission Limitation:

8.8 tpy of VOC for stack and fugitive emissions

Applicable Compliance Method:

Compliance with the allowable mass emission rate, in pound(s) per hour, for VOC shall be determined using Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions for stack emissions plus the VOC emission rate, in lbs/hr, determined from EPA-453/R-95-017 "Protocol for Equipment Leak Emission Estimates" for fugitive emissions, then multiplied by 8760, and then divided by 2000 lbs/ton.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: DPPD (P019)

Activity Description: DPPD - Rubber Chemical - reactors, blowdown tanks, still, and aniline recovery system

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
DPPD rubber chemical - reactors, blowdown tank, still & aniline recovery system with a condenser, cyclone, and dust collector	OAC rule 3745-17-07(B)	See A.1.2.b below.
	OAC rule 3745-17-08	See A.1.2.d below.
	OAC rule 3745-21-09(BBB)	See A.1.2.c below.

2. Additional Terms and Conditions

- 2.a
 - i. The following unit operation emit particulates: the raw material charging which is vented to a baghouse.
 - ii. The following unit operations emit VOC: the raw material charging, the reactor/storage vessel, the primary and secondary distillation columns, the product packaging, the receivers, the product storage tank, the intermediate (DPA) tank, the recovered aniline tank, the recovery system, and the process vent collection which is vented to a condenser, and the associated piping (i.e., connectors, flanges, pumps, etc.).
- 2.b Visible particulate emissions from any fugitive dust source shall not exceed 20% opacity as a three-minute average.
- 2.c For the DPPD/PHDA process, the VOC emissions from the reactor process vent streams, except the north and south still jet vents and process emergency safety relief devices, shall be vented to a control device that is designed and operated to achieve a control efficiency of at least ninety-four per cent, by weight, as determined under paragraph (C) of rule 3745-21-04 of the Administrative Code.
- 2.d The permittee shall use hoods, fans, and other equipment to adequately enclose, contain, capture, vent, and control the fugitive dust. Such equipment shall meet the following requirements:
 - i. the collection efficiency shall be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design; and
 - ii. there shall be no visible particulate emissions from the exhaust stack(s) of the control equipment.

II. Operational Restrictions

1. The average temperature of the exhaust gases from the condenser, for any 3-hour block of time, shall not be greater than 111 degrees Fahrenheit (43.9 degrees Celsius).

II. Operational Restrictions (continued)

2. The pressure drop across the baghouse shall be maintained within the range of established either during the most recent emission test that demonstrated that the emissions unit was in compliance or by the manufacturer's written recommendation while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser 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 monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average temperature of the exhaust gases from the condenser, when the emissions unit was in operation, was greater than the temperature limitation specified above; and
 - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
2. 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 exhaust of the dust collector and for any visible particulate emissions from any windows, doors, and/or roof monitors 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. For the windows, doors, and/or roof monitors serving this emissions unit:
 - i. the color of the emissions;
 - ii. whether the emissions are representative of normal operations;
 - iii. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - iv. the total duration of any visible emission incident; and
 - v. any corrective actions taken to eliminate the visible emissions.
 - b. For the exhaust of the dust collector serving this emissions unit:
 - i. the color of the emissions;
 - ii. the cause of the abnormal emissions;
 - iii. the total duration of any visible emission incident; and
 - iv. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit temperature deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of the exhaust gases from the condenser exceeded the temperature limitation specified above.
2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the exhaust of the dust collector serving this emissions unit and/or from any windows, doors, and/or roof monitors serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The deviation 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. The permittee shall conduct, or have conducted, emission testing for the condenser associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 42 months after issuance of the permit.
 - b. The emission testing shall be conducted to demonstrate compliance with control efficiency limitation for VOC.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for control efficiency of VOC, Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A.
 - 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 OAC rule 3745-21-10. 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.
 - e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
3. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.
4. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
5. Compliance with the emission limitations in sections A.I.1 and A.I.2 of these terms and conditions shall be determined in accordance with the following methods:
 - 5.a Emission Limitation:

20% opacity as a 3-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)
 - 5.b Emission Limitation:

no visible particulate emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

V. Testing Requirements (continued)

5.c Emission Limitation:

a control efficiency of at least ninety-four percent, by weight

Applicable Compliance Method:

Compliance shall be demonstrated using Reference Methods 1-4 and 25 or 25A of 40 CFR Part 60, Appendix A as required in sections A.V.1 through A.V.4 of these terms and conditions. Compliance shall be demonstrated by continuous temperature monitoring and recording of the exhaust gases from the condenser when the emissions unit is operation as required in section A.III.1 of these terms and conditions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: RLP (P020)

Activity Description: RLP - Reactive Liquid Polymers - reactors, processing vessels, product purification, finishing, and raw material recovery

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
reactive liquid polymers (RLP) - reactors, processing vessels, product purification and finishing, and raw material recovery with a thermal incinerator as control	OAC rule 3745-31-05 (PTI 16-395)	117.94 tpy of volatile organic compounds (VOC)
	OAC rule 3745-21-07(G)(2)	85 percent overall control efficiency for organic compounds (OC)
	OAC rule 3745-21-07(G)(6)	90 percent destruction of OC
	40 CFR Part 63, Subpart U	See A.III below.

2. Additional Terms and Conditions

- 2.a The following unit operations emit OC: the RM charging system, the CTBN reactors, the blowdown tanks, the wet rubber storage tanks, the dryer system, the drumming station, the monomer and solvent recovery systems, the AEP storage tank, the post RXN & blending system, and the vent collection tanks which are controlled with a thermal incinerator and/or condenser and the roof vent tank and the associated piping (i.e., connectors, flanges, pumps, etc.).

II. Operational Restrictions

- The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record Keeping Requirements

- Each piece of equipment in a process unit to which 40 CFR Part 63, Subpart H 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 2.** When each leak is detected as specified in sections A.III.3.a and A.III.4.f; sections A.III.8.b and A.III.9.a; and sections A.III.12.g, A.III.13.a, and A.III.14.b of these terms and conditions, the following requirements apply:
 - a. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - b. The identification on a valve may be removed after it has been monitored as specified in sections A.III.8.j and A.III.17.g.i.(d) of these terms and conditions, and no leak has been detected during the follow-up monitoring. If the permittee elects to comply using the provisions of section A.III.14.d.i of these terms and conditions, the identification on a connector may be removed after it is monitored as specified in section A.III.14.d.i of these terms and conditions and no leak is detected during that monitoring.
 - c. 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 A.III.14.d.i of these terms and conditions, may be removed after it has been repaired.
- 3.** The permittee shall monitor each pump in light liquid service monthly to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions and shall comply with the following requirements:
 - 3.a** The instrument reading for pumps in light liquid service, as determined by the method as specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, that defines a leak in each phase of the standard is:
 - i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 5,000 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 5,000 parts per million or greater for pumps handling polymerizing monomers and an instrument reading of 1,000 parts per million or greater for all other pumps.
 - 3.b** Each pump in light liquid service 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.
 - 3.c** 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 A.III.11 of these terms and conditions.
 - 3.d** A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - 3.e** For pumps in light liquid service, the first attempts at repair shall include, but are not limited to, the following practices where practicable:
 - i. tightening of packing gland nuts; and
 - ii. ensuring that the seal flush is operating at design pressure and temperature.
 - 3.f** The permittee 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 permittee has decided, all subsequent percent calculations shall be made on the same basis.

III. Monitoring and/or Record Keeping Requirements (continued)

- 3.g** If, in Phase III, calculated on a rolling, 6-month average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the permittee shall implement a quality improvement program for pumps that complies with the requirements of sections A.III.18, A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
- 3.h** 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.
- 3.i** 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 sections A.III.3 and A.III.3a of these terms and conditions;

PT = total pumps in organic HAP service, including those meeting the criteria in sections 63.163(e) and 63.163(f) of 40 CFR Part 63, Subpart H; and

PS = number of pumps leaking within 1 month of start-up during the current monitoring period.

- 4.** 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.
- 4.a** Each compressor seal system as required in section A.III.4 of these terms and condition shall be:
- i. operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. 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 sections A.III.12 and A.III.12.a through A.III.12.k; or
 - iii. equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- 4.b** The barrier fluid shall not be in light liquid service.
- 4.c** Each barrier fluid system as described in sections A.III.4, A.III.4.a, and A.III.4.b of these terms and conditions shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- 4.d** Each sensor as required in section A.III.4.c of these terms and conditions shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- 4.e** The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 4.f** If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under section A.III.4.e of these terms and conditions, a leak is detected.
- 4.g** 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 A.III.11 of these terms and conditions.
- 4.h** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

5. 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 below, as measured by the method specified in section A.V.2 of these terms and conditions.
 - a. 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 A.III.11 of these terms and conditions.
 - b. 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 A.V.2 of these terms and conditions.
6. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured. Each closed-purge, closed-loop, or closed-vent system shall:
 - a. return the purged process fluid directly to the process line; or
 - b. collect and recycle the purged process fluid to a process; or
 - c. be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of sections A.III.12 and A.III.12.a through A.III.12k; or
 - d. collect, store, and transport the purged process fluid to a system or facility identified below:
 - i. a waste management unit as defined in section 63.111 of 40 CFR Part 63, Subpart G, 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 (If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR Part 63, Subpart G, 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.); or
 - 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.
7. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - 7.a 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.
 - 7.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.
 - 7.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 sections A.III.7.a and A.III.7.b of these terms and conditions at all other times.
8. The permittee shall monitor all valves that are either in gas service or in light liquid service at the intervals specified in sections A.III.8.c and A.III.8.d of these terms and conditions and shall comply with the following requirements:
 - 8.a The valves shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.b** The instrument reading that defines a leak in a valve in each phase of the standard is:
- i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 500 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 500 parts per million or greater.
- 8.c** In Phases I and II, each valve shall be monitored quarterly.
- 8.d** In Phase III, the permittee shall monitor valves for leaks at the intervals specified below:
- i. At process units with 2 percent or greater leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, the permittee shall either:
 - (a) monitor each valve once per month; or
 - (b) within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and monitor quarterly.
 - ii. At process units with less than 2 percent leaking valves, the permittee shall monitor each valve once each quarter, except as provided in paragraphs (iii) and (iv) below.
 - iii. At process units with less than 1 percent leaking valves, the permittee may elect to monitor each valve once every 2 quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the permittee may elect to monitor each valve once every 4 quarters.
- 8.e** 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 sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions;
- VL = number of valves found leaking, excluding nonrepairables as provided in section A.III.8.g of these terms and conditions;
- VT = total valves monitored in a monitoring period, excluding valves monitored as required by section A.III.8.j of these terms and conditions; and
- VC = optional credit for removed valves = $0.67 \times$ 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 $VC = 0$).
- 8.f** For use in determining monitoring frequency, as specified in section A.III.8.d of these terms and conditions, 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.g** 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 (ii) below. 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.
- 8.h** 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 A.III.11 of these terms and conditions.
- 8.i** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 8.j** 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 sections A.V.1 and A.V.1.a through A.V.1.f and section A.V.2, as appropriate, to determine whether the valve has resumed leaking.
- ii. Periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions may be used to satisfy the requirements of this section, if the timing of the monitoring period coincides with the time specified in this section. Alternatively, other monitoring may be performed to satisfy the requirements of this section, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this section.
- iii. If a leak is detected by monitoring that is conducted pursuant to this section, the permittee shall follow the provisions of paragraphs (a) and (b) below, to determine whether that valve must be counted as a leaking valve for purposes of sections A.III.8.e through A.III.8.g of these terms and conditions.
- (a) If the permittee elected to use periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions to satisfy the requirements of this section, then the valve shall be counted as a leaking valve.
- (b) If the permittee elected to use other monitoring, prior to the periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions, to satisfy the requirements 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.
- 8.k** First attempts at repair include, but are not limited to, the following 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.
- 9.** 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 by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions within 5 calendar days if evidence is found of a potential leak to the atmosphere by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in sections A.III.9.b and A.III.9.c of these terms and conditions, it is not necessary to monitor the system for leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 9.a** 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 or pumps subject to section A.III.3.a.iii.(c), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- 9.b**
- i. 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 A.III.11 of these terms and conditions.
 - ii. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - iii. For equipment identified in section A.III.9 of these terms and conditions that is not monitored by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, 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.
- 9.c** First attempts at repair include, but are not limited to, the practices described under sections A.III.3.d through A.III.3.e and section A.III.8.k of these terms and conditions, for pumps and valves, respectively.
- 10.** No later than September 5, 1999, 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 40 CFR Part 63, Subpart H 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 sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions or shall comply with the requirements of sections 63.119(b) or (c) of 40 CFR Part 63, Subpart G.
- 11.**
- a. Delay of repair of equipment for which leaks have been detected is allowed if the repair 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:
 - i. the permittee 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
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions.
 - d. Delay of repair for pumps is also allowed if:
 - i. repair requires replacing the existing seal design with a new system that the permittee has determined under the provisions of sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions will provide better performance: or
 - (a) a dual mechanical seal system that meets the requirements of section 63.163(e) of 40 CFR Part 63, Subpart H;
 - (b) a pump that meets the requirements of section 63.163(f) of 40 CFR Part 63, Subpart H; or
 - (c) a closed-vent system and control device that meets the requirements of section 63.163(g) of 40 CFR Part 63, Subpart H; and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

III. Monitoring and/or Record Keeping Requirements (continued)

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.

- 12.** Closed-vent systems and control devices used to comply with provisions of 40 CFR Part 63, Subpart H shall comply with the following:
- 12.a** 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 per 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 of 40 CFR Part 63, Subpart H.
- 12.b** 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 second at a minimum temperature of 760 degrees Celsius.
- 12.c** Flares used to comply with 40 CFR Part 63, Subpart H shall comply with the requirements of section 63.11(b) of 40 CFR Part 63, Subpart A.
- 12.d** Control devices that are used to comply with the provisions of 40 CFR Part 63, Subpart H shall be monitored to ensure that the control devices are operated and maintained in conformance with their design.
- 12.e** Each closed-vent system shall be inspected according to the procedures and schedule specified below:
- i. If the closed-vent system is constructed of hard-piping, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - ii. If the vapor collection system or closed-vent system is constructed of duct work, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual inspections according to the procedures in section A.III.12.f of these terms and conditions.
- 12.f** Each closed-vent system shall be inspected according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 12.g** 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 section A.III.12.h of these terms and conditions.
- i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - ii. Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in section A.III.12.h of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 12.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 permittee 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 completed by the end of the next process unit shutdown.
- 12.i** 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 permittee shall comply with either paragraph (i) or (ii) below, except as provided in paragraph (iii) below.
- i. 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 40 CFR Part 63, Subpart G. The flow indicator shall be installed at the entrance to any bypass line; or
- ii. 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.
- iii. 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.
- 12.j** Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of 40 CFR Part 63, Subpart H, such system or control device shall be operating.
- 12.k** The permittee of any control device subject to 40 CFR Part 63, Subpart H that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 63, Subpart H, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart H. The permittee shall identify which option has been chosen, in the next periodic report required by section A.IV.3 of these terms and conditions.
- 13.** Each agitator in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 13.a** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- 13.b** i. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
- ii. If there are indications of liquids dripping from the agitator, a leak is detected.
- 13.c** i. 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 A.III.11 of these terms and conditions.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 14.** The permittee shall monitor all connectors in gas/vapor and light liquid service at the intervals specified in section A.III.14.c of these terms and conditions.
- 14.a** The connectors shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 14.b** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.c The permittee shall monitor for leaks at the intervals specified in either paragraph (i) or (ii) and in paragraph (iii) below:

- i. For each group of existing process units within an existing source, by no later than January 31, 1998, the permittee shall monitor all connectors.
- ii. For new sources, within the first 12 months after initial start-up or January 31, 1998, whichever is later, the permittee shall monitor all connectors.
- iii. After conducting the initial survey required in paragraph (i) or (ii) above, the permittee shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (a) through (e) below, except as provided in section A.III.14.e of these terms and conditions:
 - (a) 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.
 - (b) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The permittee 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.
 - (c) If the permittee 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 permittee may monitor the connectors one time every 4 years. The permittee 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.
 - (d) If a process unit complying with the requirements 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 permittee shall increase the monitoring frequency to one time every 2 years. The permittee 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 permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.
 - (e) If a process unit complying with requirements of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the permittee shall increase the monitoring frequency to one time per year. The permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.

The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.d** i. Except as provided in paragraph (ii) below, 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 section A.III.14.f of these terms and conditions, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of section A.III.14.g.ii of these terms and conditions.
- ii. As an alternative to the requirements in paragraph (i) above, a permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the permittee may not count nonrepairable connectors for the purposes of section A.III.14.g.ii of these terms and conditions. The permittee shall calculate the percent leaking connectors for the monitoring periods described in section A.III.14.c, by setting the nonrepairable component, CAN, in the equation in section A.III.14.g.ii to zero for all monitoring periods.
- iii. A permittee may switch alternatives described in paragraphs (i) and (ii) above at the end of the current monitoring period, provided that it is reported as required in sections A.IV.1 through A.IV.3 of these terms and conditions 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.
- 14.e** As an alternative to the requirements for sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) of these terms and conditions, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before September 5, 1996 may:
- i. comply with the requirements of section A.III.9 and A.III.9 .a through A.III.9.c of these terms and conditions; and
- ii. be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutant 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 section A.III.14.f of these terms and conditions.
- 14.f** 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 63.174(g) of 40 CFR Part 63, Subpart H and in section A.III.11 of these terms and conditions. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.g For use in determining the monitoring frequency, as specified in section A.III.14.c, the percent leaking connectors shall be calculated as specified in paragraphs (i) and (ii) below:

(i) For the first monitoring period, use the following equation:

$$\% \text{ CL} = \text{CL}/(\text{Ct} + \text{CC}) \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

Ct = total number of monitored connectors in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

(ii) For subsequent monitoring periods, use the following equation:

$$\% \text{ CL} = [(\text{CL} - \text{CAN})/(\text{Ct} + \text{CC})] \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

CAN = number of allowable nonrepairable connectors, as determined by monitoring required in sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) and sections A.III.14.d through A.III.14.e of these terms and conditions, not to exceed 2 percent of the total connector population, Ct;

Ct = total number of monitored connectors, including nonrepairables, in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.h** Optional credit for removed connectors. If the permittee eliminates a connector subject to monitoring under section A.III.14.c of these terms and conditions, the permittee may receive credit for elimination of the connector, as described in section A.III.14.g of these terms and conditions, provided the requirements in paragraphs (i) through (iv) below are met.
- (i) The connector was welded after July 31, 1997.
 - (ii) The integrity of the weld is demonstrated by monitoring it according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.
 - (iii) Welds created after June 12, 1995 to September 4, 1996 shall be monitored or tested by October 31, 1997.
 - (iv) Welds created after September 5, 1996 shall be monitored or tested within 3 months after being welded.
 - (v) 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 40 CFR Part 63, Subpart H.
- 15.**
- a. In Phase III, the permittee may elect to comply with one of the alternative quality improvement programs specified in sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. The decision to use one of these alternative provisions to comply with the requirements of section A.III.8.d.i.(b) of these terms and conditions must be made during the first year of Phase III for existing process units and for new process units.
 - b. The permittee of a process unit subject to the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions 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 sections A.III.8.e through A.III.8.g of these terms and conditions.
 - c. After the process unit has fewer than 2 percent leaking valves, the permittee may elect to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, to continue to comply with the requirements in section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, or comply with both the requirements.
 - i. If the permittee elects to continue the quality improvement program, the permittee is exempt from the requirements for performance trials as specified in section A.III.17.f of these terms and conditions, or further progress as specified in section A.III.16.d of these terms and conditions, as long as the process unit has fewer than 2 percent leaking valves calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions.
 - ii. If the permittee elects to comply with both sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in sections A.III.8.d.ii, A.III.8.d.iii and A.III.8.d.iv of these terms and conditions.
 - iii. If the permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

16. A permittee who elects to use a quality improvement program to demonstrate further progress shall meet the following requirements:
- a. The permittee shall continue to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except each valve shall be monitored quarterly.
 - b. The permittee shall collect the following data, and maintain records as required in section A.III.26.a of these terms and conditions, 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; and
 - iii. if a leak is detected, the repair methods used and the instrument readings after repair.
 - c. The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
 - d. The permittee must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of this section, except as provided in paragraphs (ii) and (iii) below.
 - 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:

$$\%LVR = (\%LVAVG1 - \%LVAVG2 / \%LVAVG1) \times 100$$

where:

$\%LVR$ = percent leaking valve reduction;

$\%LVAVG1 = (\%VLi + \%VLi+1)/2$; and

$\%LVAVG2 = (\%VLi+1 + \%VLi+2)/2$;

III. Monitoring and/or Record Keeping Requirements (continued)

where:

%V_{Li}, %V_{Li+1}, %V_{Li+2} are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

ii. A permittee 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 A.III.8.d.i.(a) of these terms and conditions using monthly monitoring or shall comply using a quality improvement program for technology review as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. If the permittee elects to comply with the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, the schedule for performance trials and valve replacements remains as specified in section A.III.17 of these terms and conditions.

iii. As an alternative to the provisions in paragraph (i) above, a permittee may use the procedure specified in paragraphs (a) and (b) below 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 = percent reduction required each quarter, as calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions; and

%VL = percent leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, at the time elected to use provisions of section A.III.8.d.i.(b) of these terms and conditions.

(b) The permittee shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section A.III.16 of these terms and conditions.

- 17.** A permittee who elects to use a quality improvement program for technology review and improvement shall meet the following requirements:
- 17.a** The permittee shall comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except the requirement for monthly monitoring in A.III.8.d.i.(a) of these terms and conditions does not apply.
- 17.b** The permittee shall collect the data specified below, and maintain records as required in section A.III.26.b of these terms and conditions, 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; and
 - 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.c** The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- 17.d** The permittee 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.
- 17.e**
- i. The permittee shall analyze the data collected to comply with the requirements of section A.III.17.b of these terms and conditions 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 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 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.g** Each permittee 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 section A.III.17.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.17.f of these terms and conditions, 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 permittee of the process unit, by the vendor, or by a designated representative. The permittee 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 sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions 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 permittee 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.
- 18.**
- a. In Phase III, if, on a rolling, 6-month 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 permittee shall comply with the requirements in sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
 - b. The permittee 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 rolling, 6-month average, in the process unit (or plant site). Once the performance level is achieved, the permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.
 - 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 rolling, 6-month average, the permittee shall resume the quality improvement program starting at performance trials.

III. Monitoring and/or Record Keeping Requirements (continued)

d. 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 (ii) below.

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.

19. The quality improvement program for pumps shall include the following:

19.a The permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

19.b The permittee shall collect the following data, and maintain records as required in section A.III.26.c of these terms and conditions, 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; and

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.

19.c The permittee shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

19.d The permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.e** i. The permittee shall analyze the data collected to comply with the requirements of section A.III.19.b of these terms and conditions 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.g** Each permittee 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 section A.III.19.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.19.f of these terms and conditions, 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 permittee 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.
- 20.** If more than one process unit is subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the recordkeeping requirements for these process units in one recordkeeping 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.
- 21.** The permittee shall have recorded the following information pertaining to all equipment in each process unit subject to the requirements in sections A.III.1 through A.III.12 of these terms and conditions:
- 21.a** A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in section 63.174 of 40 CFR Part 63, Subpart H and instrumentation systems) subject to the requirements of 40 CFR Part 63, Subpart H. 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 A.III.14.c.i or A.III.14.c.ii of these terms and conditions.
- 21.b** A schedule by process unit for monitoring connectors subject to section A.III.14 of these terms and conditions and valves subject to section A.III.8 of these terms and conditions.
- 21.c** Equipment subject to the provisions of this subpart shall be identified on a plant site plan, in log entries, or by other appropriate methods. Physical tagging of the equipment to indicate that it is in organic HAP service is not required.

III. Monitoring and/or Record Keeping Requirements (continued)

- 21.d** A list of identification numbers for equipment that the permittee elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), 63.164(h), 63.165(c), or 63.173(f) of 40 CFR Part 63, Subpart H.
- 21.e** A list of identification numbers for compressors that the permittee 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 40 CFR Part 63, Subpart H.
- 21.f** Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the permittee elects to equip with a closed-vent system and control device, under the provisions of section A.III.10 of these terms and conditions.
- 21.g** A list of identification numbers for pressure relief devices subject to section A.III.5 of these terms and conditions.
- 21.h** A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of 40 CFR Part 63, Subpart H.
- 21.i** Identification of instrumentation systems subject to the provisions of 40 CFR Part 63, Subpart H. Individual components in an instrumentation system need not be identified.
- 21.j** Identification of screwed connectors subject to the requirements of section A.III.14.e of these terms and conditions. Identification can be by area or grouping as long as the total number within each group or area is recorded.
- 21.k** 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 40 CFR Part 63, Subpart H and an explanation of the design criteria; and
 - ii. any changes to these criteria and the reasons for the changes.
- 21.l** The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of sections 63.168(h) and (i) of 40 CFR Part 63, Subpart H, agitators subject to the provisions of sections 63.173(h) through (j), and connectors subject to the provisions of sections 63.174(f) and (g) of 40 CFR Part 63, Subpart H 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; and
 - 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.
- 21.m** A list of valves removed from and added to the process unit, as described in section A.III.8.e of these terms and conditions, if the net credits for removed valves is expected to be used.
- 21.n** A list of connectors removed from and added to the process unit, as described in section A.III.14.g.(i) of these terms and conditions, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of 40 CFR Part 63, Subpart H. This is not required unless the net credits for removed connectors is expected to be used.
- 22.** For visual inspections of equipment subject to the provisions of this 40 CFR Part 63, Subpart H, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions for leaking equipment identified in this inspection. These records shall be retained for 2 years.

III. Monitoring and/or Record Keeping Requirements (continued)

- 23.** 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 40 CFR Part 63, Subpart H, the following information shall be recorded and kept for 2 years:
- 23.a** The instrument and the equipment identification number and the operator name, initials, or identification number.
- 23.b** The date the leak was detected and the date of the first attempt to repair the leak.
- 23.c** The date of successful repair of the leak.
- 23.d** Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.
- 23.e** "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 permittee 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) of 40 CFR Part 63, Subpart A, 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.
- 23.f** Dates of process unit shutdowns that occur while the equipment is unrepaired.
- 23.g** 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 A.III.14.c of these terms and conditions, as described in section A.III.14.d of these terms and conditions, unless the permittee elects to comply with the provisions of section A.III.14.d.ii of these terms and conditions.
- 23.h** The date and results of monitoring as required in sections A.III.14.d through A.III.14.e of these terms and conditions. If identification of connectors that have been opened or otherwise had the seal broken is made by location under section A.III.23.g of these terms and conditions, then all connectors within the designated location shall be monitored.
- 23.i** Copies of the periodic reports as specified in section A.IV.3 of these terms and conditions, if records are not maintained on a computerized database capable of generating summary reports from the records.
- 24.** The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) of 40 CFR Part 63, Subpart H and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in section A.III.5 of these terms and conditions. The results shall include:
- a. the background level measured during each compliance test; and
- b. the maximum instrument reading measured at each piece of equipment during each compliance test.

III. Monitoring and/or Record Keeping Requirements (continued)

- 25.** The permittee shall maintain records of the information specified below for closed-vent systems and control devices. The records specified in paragraph (a) below shall be retained for the life of the equipment. The records specified in paragraphs (b) and (c) below shall be retained for 2 years.
- a. The design specifications and performance demonstrations specified below:
 - 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 40 CFR Part 63; and
 - iv. a description of the parameter or parameters monitored, as required in section A.III.12.d of these terms and conditions, 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.
 - b. Records of operation of closed-vent systems and control devices, as specified below:
 - i. dates and durations when the closed-vent systems and control devices 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; and
 - iii. dates and durations of start-ups and shutdowns of control devices.
 - c. Records of inspections of closed-vent systems as specified below:
 - i. for each inspection conducted 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; and
 - ii. for each inspection conducted during which leaks were detected, the information specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions shall be recorded.
- 26.** Each permittee of a process unit subject to the requirements of sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.h of these terms and conditions shall maintain the records specified in sections A.III.26.a through A.III.26.i of these terms and conditions for the period of the quality improvement program for the process unit.
- 26.a** For permittees who elect to use a reasonable further progress quality improvement program, as specified in section A.III.16 of these terms and conditions:
- i. all data required in section A.III.16.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter; and
 - iii. the beginning and ending dates while meeting the requirements of section A.III.16 of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.b** For permittees who elect to use a quality improvement program of technology review and improvement, as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions:
- i. all data required in section A.III.17.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter;
 - iii. documentation of all inspections conducted under the requirements of section A.III.17.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions.
- 26.c** For permittees subject to the requirements of the pump quality improvement program as specified in sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions:
- i. all data required in section A.III.19.b of these terms and conditions;
 - ii. the rolling average percent leaking pumps;
 - iii. documentation of all inspections conducted under the requirements of section A.III.19.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions.
- 26.d** 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.
- 26.e** Records of all analyses required in sections A.III.17 and A.III.17.a through A.III.17.g and A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions. The records shall 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 A.III.17.f.iii and A.III.19.f.iii of these terms and conditions; and
 - iv. the beginning date and duration of performance trials of each candidate superior emission performing technology.
- 26.f** All records documenting the quality assurance program for valves or pumps as specified in sections A.III.17.g and A.III.19.g of these terms and conditions.
- 26.g** 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 sections A.III.17.g and A.III.19.g of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.h** Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) below:
- i. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) of this section.
- (a) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (b) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (c) 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.
- 26.i** 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 Sec. 63.160 of 40 CFR Part 63, Subpart H.
- 27.** The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
- The permittee shall collect and record the following information for each day:
- a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

28. The permittee shall collect and record the following information for this emissions unit each month:
- a. the amount of volatile organic material charged, in tons;
 - b. the amount of volatile organic material converted to product, in tons;
 - c. the amount of volatile organic material recovered, in tons;
 - d. the amount of volatile organic material converted to waste, in tons;
 - e. the amount of volatile organic material sent to the oxidizer (i.e., (a) minus (b) minus (c) minus (d)), in tons;
 - f. the fugitive and hose volatile organic compounds emissions, in tons;
 - g. the amount of volatile organic compounds emitted from the thermal oxidizer (i.e., (e) times (1- the destruction efficiency)); and
 - h. the total volatile organic compounds emission rate (i.e., (f) plus (g)), in tons.

IV. Reporting Requirements

1. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit the reports listed in paragraphs (a) and (b) below:
 - (a) a 'Notification of Compliance Status' report described in section A.IV.2 of these terms and conditions; and
 - (b) periodic reports described in section A.IV.3 of these terms and conditions.
2. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit a Notification of Compliance Status by December 28, 1997. The notification shall provide the information listed below in paragraphs (a) through (d) for each process unit subject to the requirements of sections 63.163 through Sec. 63.174 of 40 CFR Part 63, Subpart H:
 - a. process unit identification;
 - b. number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service;
 - c. method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and
 - d. planned schedule for each phase of the requirements in sections A.III.3.a and A.III.8.b of these terms and conditions.

IV. Reporting Requirements (continued)

3. The permittee of a source subject to this subpart shall submit periodic reports on a semi-annual basis, covering the periods from January 1 through June 30 and July 1 through December 31 of each year. The report shall contain the information in paragraphs (a) and (b) below and shall be submitted semiannually starting 6 months after December 28, 1997. The first periodic report shall cover the first 6 months after December 28, 1997. Each subsequent periodic report shall cover the 6-month period following the preceding period.
 - a. For each process unit complying with the provisions of sections 63.163 through 63.174 of 40 CFR Part 63, Subpart H, the summary information listed in paragraphs (i) through (xv) below for each monitoring period during the 6-month period shall be submitted:
 - i. the number of valves for which leaks were detected as described in sections A.III.8 and A.III.8.a through A.III.8.b of these terms and conditions, the percent leakers, and the total number of valves monitored;
 - ii. the number of valves for which leaks were not repaired as required in sections A.III.8.h through A.III.8.k of these terms and conditions, identifying the number of those that are determined nonrepairable;
 - iii. the number of pumps for which leaks were detected as described in sections A.III.3 and A.III.3.a through A.III.3.b of these terms and conditions, the percent leakers, and the total number of pumps monitored;
 - iv. the number of pumps for which leaks were not repaired as required in sections A.III.3.c through A.III.3.e of these terms and conditions;
 - v. the number of compressors for which leaks were detected as described in section A.III.4.f of these terms and conditions;

IV. Reporting Requirements (continued)

- vi. the number of compressors for which leaks were not repaired as required in sections A.III.4.g through A.III.4.h of these terms and conditions;
 - vii. the number of agitators for which leaks were detected as described in sections A.III.13 and A.III.13.a through A.III.13.b of these terms and conditions;
 - viii. the number of agitators for which leaks were not repaired as required in section A.III.13.c of these terms and conditions;
 - ix. the number of connectors for which leaks were detected as described in sections A.III.14 and A.III.14.a through A.III.14.b of these terms and conditions, the percent of connectors leaking, and the total number of connectors monitored;
 - x. the number of connectors for which leaks were not repaired as required in section A.III.14.f of these terms and conditions, identifying the number of those that are determined nonreparable;
 - xi. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible;
 - xii. the results of all monitoring to show compliance with section 63.164(i) of 40 CFR Part 63, Subpart H, section A.III.5 of these terms and conditions, and section A.III.12.e of these terms and conditions conducted within the semiannual reporting period;
 - xiii. if applicable, the initiation of a monthly monitoring program under section A.III.8.d.i.(a) of these terms and conditions, or a quality improvement program under either sections A.III.16 or A.III.17 and A.III.17.a through A.III.17.g;
 - xiv. if applicable, notification of a change in connector monitoring alternatives as described in section A.III.14.d of these terms and conditions; and
 - xv. if applicable, the compliance option that has been selected under section A.III.12.k of these terms and conditions.
- b. The information listed in section A.IV.2 of these terms and conditions for the Notification of Compliance Status for process units with later compliance dates shall be submitted, in addition to any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

Starting February 2, 2000, the periodic reports shall be submitted as part of the periodic reports required by paragraph 63.506(e)(6) of 40 CFR Part 63, Subpart U.

- 4. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
- 5. The deviation reports shall be submitted in accordance with the requirements specified in Part I - General Term and Condition A.1.c of this permit.
- 6. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall include the calculations of the total VOC emissions and shall be submitted by January 31 of each year.

V. Testing Requirements

- 1. Monitoring, as required under 40 CFR Part 63, Subpart H, shall comply with the following requirements:

V. Testing Requirements (continued)

- 1.a** Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.
- 1.b** i. Except as provided for in paragraph (ii) below, 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 (i) above, 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 (i) above.
- 1.c** 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.
- 1.d** 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 (a) through (c) below. 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 A.V.1.b.i of these terms and conditions. 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, in 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 (iii) below.
- (c) For Phase III, a mixture of methane or other compounds, as applicable, in air, at a concentration of approximately, but less than, 10,000 parts per million methane for agitators, 5,000 parts per million for pumps in polymerizing monomer service, and 500 parts per million for all other equipment, except as provided in paragraph (iii) below.
- 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 permittee need not calibrate the scales that will not be used during that day's monitoring.
- 1.e** 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.

V. Testing Requirements (continued)

- 1.f Monitoring data that do not meet the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions may be used to qualify for less frequent monitoring under the provisions in sections A.III.8.d.ii and A.III.8.d.iii of these terms and conditions or sections A.III.14.c.iii.(b) or A.III.14.c.iii.(c) of these terms and conditions provided the data meet the conditions specified in paragraphs (i) and (ii) below.
- i. The data were obtained before April 22, 1994.
 - ii. The departures from the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions or from the specified monitoring frequency of section A.III.8.c of these terms and conditions 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 section A.V.1.b of these terms and conditions, 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.
2. When equipment is monitored for compliance as required in sections 63.164(i) of 40 CFR Part 63, Subpart H, A.III.15 of these terms and conditions, and A.III.12.i of these terms and conditions or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by 40 CFR Part 63, Subpart H, the permittee may elect to adjust or not to adjust the instrument readings for background. If a permittee elects to not adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in sections A.V.1.a through A.V.1.d of these terms and conditions. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If a permittee elects to adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in paragraphs (a) through (d) below.
- a. The requirements of sections A.V.1.a through A.V.1.d of these terms and conditions shall apply.
 - b. The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - c. 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.
 - d. 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.

V. Testing Requirements (continued)

3.
 - a. 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 a permittee 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.
 - b. A permittee may use good engineering judgment rather than the procedures in paragraph (a) above to determine that the percent organic HAP content does not exceed 5 percent by weight. When a permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (a) above shall be used to resolve the disagreement.
 - c. Conversely, the permittee 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.
 - d. If a permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (a) above, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.
 - e. Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.
4. When a flare is used to comply with section A.III.12.c of these terms and conditions, the compliance determination shall be conducted using Method 22 of 40 CFR Part 60, Appendix A to determine visible emissions.
5. The permittee shall conduct, or have conducted, emission testing for the thermal incinerator associated with this emissions unit in accordance with the following requirements:
 - a. The emission testing shall be conducted within 54 months after issuance of the permit.
 - b. The emission testing shall be conducted to demonstrate compliance with the overall control efficiency*.
 - c. The test method(s) which must be employed to demonstrate compliance with the overall control efficiency are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
 - 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 OAC rule 3745-21-10. 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.
 - e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

*No capture testing is required because the emissions unit is a closed system with 100% capture.

V. Testing Requirements (continued)

6. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).
7. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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.
8. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
9. Compliance with the emission limitation in section A.I of these terms and conditions shall be determined in accordance with the following method:
 - 9.a Emission Limitation:

85 percent overall control efficiency

90 percent destruction of OC

Applicable Compliance Method:

Compliance shall be demonstrated using the test method(s) and procedures as required in sections A.V.5 through A.V.8 of these terms and conditions.
 - 9.b Emission Limitation:

117.94 tpy of VOC

Applicable Compliance Method:

Compliance shall be demonstrated based upon the record keeping requirements specified in section A.III.28.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: AN #60 (T041)

Activity Description: Acrylonitrile tank #60 - 12,000 gallon horizontal storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
12,000-gallon fixed roof storage tank - tank #60	OAC rule 3745-21-07(D)	See A.I.2.a below.
	40 CFR Part 63, Subpart U	See A.III below.

2. Additional Terms and Conditions

- 2.a No person shall place, store, or hold in any stationary storage vessel of more than five hundred gallons capacity any volatile photochemically reactive material unless such vessel is equipped with a permanent submerged fill pipe, is loaded through the use of a portable loading tube which can be inserted below the liquid level line during loading operations, or is a pressure tank as described in OAC rule 3745-21-07(D)(1) or is fitted with a vapor recovery system as described in OAC rule 3745-21-07(D)(1)(b).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Each piece of equipment in a process unit to which 40 CFR Part 63, Subpart H 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 2.** When each leak is detected as specified in sections A.III.3.a and A.III.4.f; sections A.III.8.b and A.III.9.a; and sections A.III.12.g, A.III.13.a, and A.III.14.b of these terms and conditions, the following requirements apply:
 - a. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - b. The identification on a valve may be removed after it has been monitored as specified in sections A.III.8.j and A.III.17.g.i.(d) of these terms and conditions, and no leak has been detected during the follow-up monitoring. If the permittee elects to comply using the provisions of section A.III.14.d.i of these terms and conditions, the identification on a connector may be removed after it is monitored as specified in section A.III.14.d.i of these terms and conditions and no leak is detected during that monitoring.
 - c. 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 A.III.14.d.i of these terms and conditions, may be removed after it has been repaired.
- 3.** The permittee shall monitor each pump in light liquid service monthly to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions and shall comply with the following requirements:
 - 3.a** The instrument reading for pumps in light liquid service, as determined by the method as specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, that defines a leak in each phase of the standard is:
 - i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 5,000 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 5,000 parts per million or greater for pumps handling polymerizing monomers and an instrument reading of 1,000 parts per million or greater for all other pumps.
 - 3.b** Each pump in light liquid service 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.
 - 3.c** 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 A.III.11 of these terms and conditions.
 - 3.d** A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - 3.e** For pumps in light liquid service, the first attempts at repair shall include, but are not limited to, the following practices where practicable:
 - i. tightening of packing gland nuts; and
 - ii. ensuring that the seal flush is operating at design pressure and temperature.
 - 3.f** The permittee 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 permittee has decided, all subsequent percent calculations shall be made on the same basis.

III. Monitoring and/or Record Keeping Requirements (continued)

- 3.g** If, in Phase III, calculated on a rolling, 6-month average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the permittee shall implement a quality improvement program for pumps that complies with the requirements of sections A.III.18, A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
- 3.h** 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.
- 3.i** 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 sections A.III.3 and A.III.3a of these terms and conditions;

PT = total pumps in organic HAP service, including those meeting the criteria in sections 63.163(e) and 63.163(f) of 40 CFR Part 63, Subpart H; and

PS = number of pumps leaking within 1 month of start-up during the current monitoring period.

- 4.** 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.
- 4.a** Each compressor seal system as required in section A.III.4 of these terms and condition shall be:
- i. operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. 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 sections A.III.12 and A.III.12.a through A.III.12.k; or
 - iii. equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- 4.b** The barrier fluid shall not be in light liquid service.
- 4.c** Each barrier fluid system as described in sections A.III.4, A.III.4.a, and A.III.4.b of these terms and conditions shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- 4.d** Each sensor as required in section A.III.4.c of these terms and conditions shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- 4.e** The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 4.f** If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under section A.III.4.e of these terms and conditions, a leak is detected.
- 4.g** 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 A.III.11 of these terms and conditions.
- 4.h** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

5. 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 below, as measured by the method specified in section A.V.2 of these terms and conditions.
 - a. 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 A.III.11 of these terms and conditions.
 - b. 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 A.V.2 of these terms and conditions.
6. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured. Each closed-purge, closed-loop, or closed-vent system shall:
 - a. return the purged process fluid directly to the process line; or
 - b. collect and recycle the purged process fluid to a process; or
 - c. be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of sections A.III.12 and A.III.12.a through A.III.12k; or
 - d. collect, store, and transport the purged process fluid to a system or facility identified below:
 - i. a waste management unit as defined in section 63.111 of 40 CFR Part 63, Subpart G, 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 (If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR Part 63, Subpart G, 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.); or
 - 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.
7. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - 7.a 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.
 - 7.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.
 - 7.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 sections A.III.7.a and A.III.7.b of these terms and conditions at all other times.
8. The permittee shall monitor all valves that are either in gas service or in light liquid service at the intervals specified in sections A.III.8.c and A.III.8.d of these terms and conditions and shall comply with the following requirements:
 - 8.a The valves shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.b** The instrument reading that defines a leak in a valve in each phase of the standard is:
- i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 500 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 500 parts per million or greater.
- 8.c** In Phases I and II, each valve shall be monitored quarterly.
- 8.d** In Phase III, the permittee shall monitor valves for leaks at the intervals specified below:
- i. At process units with 2 percent or greater leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, the permittee shall either:
 - (a) monitor each valve once per month; or
 - (b) within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and monitor quarterly.
 - ii. At process units with less than 2 percent leaking valves, the permittee shall monitor each valve once each quarter, except as provided in paragraphs (iii) and (iv) below.
 - iii. At process units with less than 1 percent leaking valves, the permittee may elect to monitor each valve once every 2 quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the permittee may elect to monitor each valve once every 4 quarters.
- 8.e** 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 sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions;
- VL = number of valves found leaking, excluding nonrepairables as provided in section A.III.8.g of these terms and conditions;
- VT = total valves monitored in a monitoring period, excluding valves monitored as required by section A.III.8.j of these terms and conditions; and
- VC = optional credit for removed valves = $0.67 \times$ 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 $VC = 0$).
- 8.f** For use in determining monitoring frequency, as specified in section A.III.8.d of these terms and conditions, 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.g** 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 (ii) below. 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.
- 8.h** 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 A.III.11 of these terms and conditions.
- 8.i** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 8.j** 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 sections A.V.1 and A.V.1.a through A.V.1.f and section A.V.2, as appropriate, to determine whether the valve has resumed leaking.
- ii. Periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions may be used to satisfy the requirements of this section, if the timing of the monitoring period coincides with the time specified in this section. Alternatively, other monitoring may be performed to satisfy the requirements of this section, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this section.
- iii. If a leak is detected by monitoring that is conducted pursuant to this section, the permittee shall follow the provisions of paragraphs (a) and (b) below, to determine whether that valve must be counted as a leaking valve for purposes of sections A.III.8.e through A.III.8.g of these terms and conditions.
- (a) If the permittee elected to use periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions to satisfy the requirements of this section, then the valve shall be counted as a leaking valve.
- (b) If the permittee elected to use other monitoring, prior to the periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions, to satisfy the requirements 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.
- 8.k** First attempts at repair include, but are not limited to, the following 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.
- 9.** 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 by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions within 5 calendar days if evidence is found of a potential leak to the atmosphere by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in sections A.III.9.b and A.III.9.c of these terms and conditions, it is not necessary to monitor the system for leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 9.a** 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 or pumps subject to section A.III.3.a.iii.(c), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- 9.b**
- i. 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 A.III.11 of these terms and conditions.
 - ii. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - iii. For equipment identified in section A.III.9 of these terms and conditions that is not monitored by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, 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.
- 9.c** First attempts at repair include, but are not limited to, the practices described under sections A.III.3.d through A.III.3.e and section A.III.8.k of these terms and conditions, for pumps and valves, respectively.
- 10.** No later than September 5, 1999, 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 40 CFR Part 63, Subpart H 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 sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions or shall comply with the requirements of sections 63.119(b) or (c) of 40 CFR Part 63, Subpart G.
- 11.**
- a. Delay of repair of equipment for which leaks have been detected is allowed if the repair 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:
 - i. the permittee 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
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions.
 - d. Delay of repair for pumps is also allowed if:
 - i. repair requires replacing the existing seal design with a new system that the permittee has determined under the provisions of sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions will provide better performance: or
 - (a) a dual mechanical seal system that meets the requirements of section 63.163(e) of 40 CFR Part 63, Subpart H;
 - (b) a pump that meets the requirements of section 63.163(f) of 40 CFR Part 63, Subpart H; or
 - (c) a closed-vent system and control device that meets the requirements of section 63.163(g) of 40 CFR Part 63, Subpart H; and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

III. Monitoring and/or Record Keeping Requirements (continued)

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.

- 12.** Closed-vent systems and control devices used to comply with provisions of 40 CFR Part 63, Subpart H shall comply with the following:
- 12.a** 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 per 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 of 40 CFR Part 63, Subpart H.
- 12.b** 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 second at a minimum temperature of 760 degrees Celsius.
- 12.c** Flares used to comply with 40 CFR Part 63, Subpart H shall comply with the requirements of section 63.11(b) of 40 CFR Part 63, Subpart A.
- 12.d** Control devices that are used to comply with the provisions of 40 CFR Part 63, Subpart H shall be monitored to ensure that the control devices are operated and maintained in conformance with their design.
- 12.e** Each closed-vent system shall be inspected according to the procedures and schedule specified below:
- i. If the closed-vent system is constructed of hard-piping, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - ii. If the vapor collection system or closed-vent system is constructed of duct work, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual inspections according to the procedures in section A.III.12.f of these terms and conditions.
- 12.f** Each closed-vent system shall be inspected according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 12.g** 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 section A.III.12.h of these terms and conditions.
- i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - ii. Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in section A.III.12.h of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 12.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 permittee 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 completed by the end of the next process unit shutdown.
- 12.i** 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 permittee shall comply with either paragraph (i) or (ii) below, except as provided in paragraph (iii) below.
- i. 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 40 CFR Part 63, Subpart G. The flow indicator shall be installed at the entrance to any bypass line; or
- ii. 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.
- iii. 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.
- 12.j** Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of 40 CFR Part 63, Subpart H, such system or control device shall be operating.
- 12.k** The permittee of any control device subject to 40 CFR Part 63, Subpart H that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 63, Subpart H, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart H. The permittee shall identify which option has been chosen, in the next periodic report required by section A.IV.3 of these terms and conditions.
- 13.** Each agitator in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 13.a** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- 13.b** i. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
- ii. If there are indications of liquids dripping from the agitator, a leak is detected.
- 13.c** i. 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 A.III.11 of these terms and conditions.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 14.** The permittee shall monitor all connectors in gas/vapor and light liquid service at the intervals specified in section A.III.14.c of these terms and conditions.
- 14.a** The connectors shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 14.b** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.c The permittee shall monitor for leaks at the intervals specified in either paragraph (i) or (ii) and in paragraph (iii) below:

- i. For each group of existing process units within an existing source, by no later than January 31, 1998, the permittee shall monitor all connectors.
- ii. For new sources, within the first 12 months after initial start-up or January 31, 1998, whichever is later, the permittee shall monitor all connectors.
- iii. After conducting the initial survey required in paragraph (i) or (ii) above, the permittee shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (a) through (e) below, except as provided in section A.III.14.e of these terms and conditions:
 - (a) 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.
 - (b) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The permittee 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.
 - (c) If the permittee 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 permittee may monitor the connectors one time every 4 years. The permittee 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.
 - (d) If a process unit complying with the requirements 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 permittee shall increase the monitoring frequency to one time every 2 years. The permittee 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 permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.
 - (e) If a process unit complying with requirements of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the permittee shall increase the monitoring frequency to one time per year. The permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.

The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.d** i. Except as provided in paragraph (ii) below, 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 section A.III.14.f of these terms and conditions, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of section A.III.14.g.ii of these terms and conditions.
- ii. As an alternative to the requirements in paragraph (i) above, a permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the permittee may not count nonrepairable connectors for the purposes of section A.III.14.g.ii of these terms and conditions. The permittee shall calculate the percent leaking connectors for the monitoring periods described in section A.III.14.c, by setting the nonrepairable component, CAN, in the equation in section A.III.14.g.ii to zero for all monitoring periods.
- iii. A permittee may switch alternatives described in paragraphs (i) and (ii) above at the end of the current monitoring period, provided that it is reported as required in sections A.IV.1 through A.IV.3 of these terms and conditions 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.
- 14.e** As an alternative to the requirements for sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) of these terms and conditions, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before September 5, 1996 may:
- i. comply with the requirements of section A.III.9 and A.III.9 .a through A.III.9.c of these terms and conditions; and
- ii. be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutant 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 section A.III.14.f of these terms and conditions.
- 14.f** 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 63.174(g) of 40 CFR Part 63, Subpart H and in section A.III.11 of these terms and conditions. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.g For use in determining the monitoring frequency, as specified in section A.III.14.c, the percent leaking connectors shall be calculated as specified in paragraphs (i) and (ii) below:

(i) For the first monitoring period, use the following equation:

$$\% CL = CL / (Ct + CC) \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

Ct = total number of monitored connectors in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

(ii) For subsequent monitoring periods, use the following equation:

$$\% CL = [(CL - CAN) / (Ct + CC)] \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

CAN = number of allowable nonrepairable connectors, as determined by monitoring required in sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) and sections A.III.14.d through A.III.14.e of these terms and conditions, not to exceed 2 percent of the total connector population, Ct;

Ct = total number of monitored connectors, including nonrepairables, in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.h** Optional credit for removed connectors. If the permittee eliminates a connector subject to monitoring under section A.III.14.c of these terms and conditions, the permittee may receive credit for elimination of the connector, as described in section A.III.14.g of these terms and conditions, provided the requirements in paragraphs (i) through (iv) below are met.
- (i) The connector was welded after July 31, 1997.
 - (ii) The integrity of the weld is demonstrated by monitoring it according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.
 - (iii) Welds created after June 12, 1995 to September 4, 1996 shall be monitored or tested by October 31, 1997.
 - (iv) Welds created after September 5, 1996 shall be monitored or tested within 3 months after being welded.
 - (v) 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 40 CFR Part 63, Subpart H.
- 15.**
- a. In Phase III, the permittee may elect to comply with one of the alternative quality improvement programs specified in sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. The decision to use one of these alternative provisions to comply with the requirements of section A.III.8.d.i.(b) of these terms and conditions must be made during the first year of Phase III for existing process units and for new process units.
 - b. The permittee of a process unit subject to the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions 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 sections A.III.8.e through A.III.8.g of these terms and conditions.
 - c. After the process unit has fewer than 2 percent leaking valves, the permittee may elect to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, to continue to comply with the requirements in section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, or comply with both the requirements.
 - i. If the permittee elects to continue the quality improvement program, the permittee is exempt from the requirements for performance trials as specified in section A.III.17.f of these terms and conditions, or further progress as specified in section A.III.16.d of these terms and conditions, as long as the process unit has fewer than 2 percent leaking valves calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions.
 - ii. If the permittee elects to comply with both sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in sections A.III.8.d.ii, A.III.8.d.iii and A.III.8.d.iv of these terms and conditions.
 - iii. If the permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

16. A permittee who elects to use a quality improvement program to demonstrate further progress shall meet the following requirements:
- a. The permittee shall continue to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except each valve shall be monitored quarterly.
 - b. The permittee shall collect the following data, and maintain records as required in section A.III.26.a of these terms and conditions, 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; and
 - iii. if a leak is detected, the repair methods used and the instrument readings after repair.
 - c. The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
 - d. The permittee must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of this section, except as provided in paragraphs (ii) and (iii) below.
 - 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:

$$\%LVR = (\%LVAVG1 - \%LVAVG2 / \%LVAVG1) \times 100$$

where:

$\%LVR$ = percent leaking valve reduction;

$\%LVAVG1 = (\%VLi + \%VLi+1)/2$; and

$\%LVAVG2 = (\%VLi+1 + \%VLi+2)/2$;

III. Monitoring and/or Record Keeping Requirements (continued)

where:

%V_{Li}, %V_{Li+1}, %V_{Li+2} are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

ii. A permittee 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 A.III.8.d.i.(a) of these terms and conditions using monthly monitoring or shall comply using a quality improvement program for technology review as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. If the permittee elects to comply with the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, the schedule for performance trials and valve replacements remains as specified in section A.III.17 of these terms and conditions.

iii. As an alternative to the provisions in paragraph (i) above, a permittee may use the procedure specified in paragraphs (a) and (b) below 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 = percent reduction required each quarter, as calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions; and

%VL = percent leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, at the time elected to use provisions of section A.III.8.d.i.(b) of these terms and conditions.

(b) The permittee shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section A.III.16 of these terms and conditions.

- 17.** A permittee who elects to use a quality improvement program for technology review and improvement shall meet the following requirements:
- 17.a** The permittee shall comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except the requirement for monthly monitoring in A.III.8.d.i.(a) of these terms and conditions does not apply.
- 17.b** The permittee shall collect the data specified below, and maintain records as required in section A.III.26.b of these terms and conditions, 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; and
 - 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.c** The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- 17.d** The permittee 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.
- 17.e**
- i. The permittee shall analyze the data collected to comply with the requirements of section A.III.17.b of these terms and conditions 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 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 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.g** Each permittee 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 section A.III.17.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.17.f of these terms and conditions, 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 permittee of the process unit, by the vendor, or by a designated representative. The permittee 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 sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions 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 permittee 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.
- 18.**
- a. In Phase III, if, on a rolling, 6-month 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 permittee shall comply with the requirements in sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
 - b. The permittee 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 rolling, 6-month average, in the process unit (or plant site). Once the performance level is achieved, the permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.
 - 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 rolling, 6-month average, the permittee shall resume the quality improvement program starting at performance trials.

III. Monitoring and/or Record Keeping Requirements (continued)

d. 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 (ii) below.

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.

19. The quality improvement program for pumps shall include the following:

19.a The permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

19.b The permittee shall collect the following data, and maintain records as required in section A.III.26.c of these terms and conditions, 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; and

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.

19.c The permittee shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

19.d The permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.e** i. The permittee shall analyze the data collected to comply with the requirements of section A.III.19.b of these terms and conditions 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.g** Each permittee 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 section A.III.19.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.19.f of these terms and conditions, 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 permittee 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.
- 20.** If more than one process unit is subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the recordkeeping requirements for these process units in one recordkeeping 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.
- 21.** The permittee shall have recorded the following information pertaining to all equipment in each process unit subject to the requirements in sections A.III.1 through A.III.12 of these terms and conditions:
- 21.a** A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in section 63.174 of 40 CFR Part 63, Subpart H and instrumentation systems) subject to the requirements of 40 CFR Part 63, Subpart H. 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 A.III.14.c.i or A.III.14.c.ii of these terms and conditions.
 - 21.b** A schedule by process unit for monitoring connectors subject to section A.III.14 of these terms and conditions and valves subject to section A.III.8 of these terms and conditions.
 - 21.c** Equipment subject to the provisions of this subpart shall be identified on a plant site plan, in log entries, or by other appropriate methods. Physical tagging of the equipment to indicate that it is in organic HAP service is not required.

III. Monitoring and/or Record Keeping Requirements (continued)

- 21.d** A list of identification numbers for equipment that the permittee elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), 63.164(h), 63.165(c), or 63.173(f) of 40 CFR Part 63, Subpart H.
- 21.e** A list of identification numbers for compressors that the permittee 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 40 CFR Part 63, Subpart H.
- 21.f** Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the permittee elects to equip with a closed-vent system and control device, under the provisions of section A.III.10 of these terms and conditions.
- 21.g** A list of identification numbers for pressure relief devices subject to section A.III.5 of these terms and conditions.
- 21.h** A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of 40 CFR Part 63, Subpart H.
- 21.i** Identification of instrumentation systems subject to the provisions of 40 CFR Part 63, Subpart H. Individual components in an instrumentation system need not be identified.
- 21.j** Identification of screwed connectors subject to the requirements of section A.III.14.e of these terms and conditions. Identification can be by area or grouping as long as the total number within each group or area is recorded.
- 21.k** 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 40 CFR Part 63, Subpart H and an explanation of the design criteria; and
 - ii. any changes to these criteria and the reasons for the changes.
- 21.l** The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of sections 63.168(h) and (i) of 40 CFR Part 63, Subpart H, agitators subject to the provisions of sections 63.173(h) through (j), and connectors subject to the provisions of sections 63.174(f) and (g) of 40 CFR Part 63, Subpart H 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; and
 - 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.
- 21.m** A list of valves removed from and added to the process unit, as described in section A.III.8.e of these terms and conditions, if the net credits for removed valves is expected to be used.
- 21.n** A list of connectors removed from and added to the process unit, as described in section A.III.14.g.(i) of these terms and conditions, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of 40 CFR Part 63, Subpart H. This is not required unless the net credits for removed connectors is expected to be used.
- 22.** For visual inspections of equipment subject to the provisions of this 40 CFR Part 63, Subpart H, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions for leaking equipment identified in this inspection. These records shall be retained for 2 years.

III. Monitoring and/or Record Keeping Requirements (continued)

- 23.** 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 40 CFR Part 63, Subpart H, the following information shall be recorded and kept for 2 years:
- 23.a** The instrument and the equipment identification number and the operator name, initials, or identification number.
- 23.b** The date the leak was detected and the date of the first attempt to repair the leak.
- 23.c** The date of successful repair of the leak.
- 23.d** Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.
- 23.e** "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 permittee 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) of 40 CFR Part 63, Subpart A, 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.
- 23.f** Dates of process unit shutdowns that occur while the equipment is unrepaired.
- 23.g** 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 A.III.14.c of these terms and conditions, as described in section A.III.14.d of these terms and conditions, unless the permittee elects to comply with the provisions of section A.III.14.d.ii of these terms and conditions.
- 23.h** The date and results of monitoring as required in sections A.III.14.d through A.III.14.e of these terms and conditions. If identification of connectors that have been opened or otherwise had the seal broken is made by location under section A.III.23.g of these terms and conditions, then all connectors within the designated location shall be monitored.
- 23.i** Copies of the periodic reports as specified in section A.IV.3 of these terms and conditions, if records are not maintained on a computerized database capable of generating summary reports from the records.
- 24.** The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) of 40 CFR Part 63, Subpart H and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in section A.III.5 of these terms and conditions. The results shall include:
- a. the background level measured during each compliance test; and
- b. the maximum instrument reading measured at each piece of equipment during each compliance test.

III. Monitoring and/or Record Keeping Requirements (continued)

- 25.** The permittee shall maintain records of the information specified below for closed-vent systems and control devices. The records specified in paragraph (a) below shall be retained for the life of the equipment. The records specified in paragraphs (b) and (c) below shall be retained for 2 years.
- a. The design specifications and performance demonstrations specified below:
 - 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 40 CFR Part 63; and
 - iv. a description of the parameter or parameters monitored, as required in section A.III.12.d of these terms and conditions, 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.
 - b. Records of operation of closed-vent systems and control devices, as specified below:
 - i. dates and durations when the closed-vent systems and control devices 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; and
 - iii. dates and durations of start-ups and shutdowns of control devices.
 - c. Records of inspections of closed-vent systems as specified below:
 - i. for each inspection conducted 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; and
 - ii. for each inspection conducted during which leaks were detected, the information specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions shall be recorded.
- 26.** Each permittee of a process unit subject to the requirements of sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.h of these terms and conditions shall maintain the records specified in sections A.III.26.a through A.III.26.i of these terms and conditions for the period of the quality improvement program for the process unit.
- 26.a** For permittees who elect to use a reasonable further progress quality improvement program, as specified in section A.III.16 of these terms and conditions:
- i. all data required in section A.III.16.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter; and
 - iii. the beginning and ending dates while meeting the requirements of section A.III.16 of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.b** For permittees who elect to use a quality improvement program of technology review and improvement, as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions:
- i. all data required in section A.III.17.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter;
 - iii. documentation of all inspections conducted under the requirements of section A.III.17.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions.
- 26.c** For permittees subject to the requirements of the pump quality improvement program as specified in sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions:
- i. all data required in section A.III.19.b of these terms and conditions;
 - ii. the rolling average percent leaking pumps;
 - iii. documentation of all inspections conducted under the requirements of section A.III.19.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions.
- 26.d** 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.
- 26.e** Records of all analyses required in sections A.III.17 and A.III.17.a through A.III.17.g and A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions. The records shall 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 A.III.17.f.iii and A.III.19.f.iii of these terms and conditions; and
 - iv. the beginning date and duration of performance trials of each candidate superior emission performing technology.
- 26.f** All records documenting the quality assurance program for valves or pumps as specified in sections A.III.17.g and A.III.19.g of these terms and conditions.
- 26.g** 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 sections A.III.17.g and A.III.19.g of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.h** Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) below:
- i. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) of this section.
- (a) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (b) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (c) 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.
- 26.i** 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 Sec. 63.160 of 40 CFR Part 63, Subpart H.

IV. Reporting Requirements

1. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit the reports listed in paragraphs (a) and (b) below:
 - (a) a 'Notification of Compliance Status' report described in section A.IV.2 of these terms and conditions; and
 - (b) periodic reports described in section A.IV.3 of these terms and conditions.
2. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit a Notification of Compliance Status by December 28, 1997. The notification shall provide the information listed below in paragraphs (a) through (d) for each process unit subject to the requirements of sections 63.163 through Sec. 63.174 of 40 CFR Part 63, Subpart H:
 - a. process unit identification;
 - b. number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service;
 - c. method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and
 - d. planned schedule for each phase of the requirements in sections A.III.3.a and A.III.8.b of these terms and conditions.

IV. Reporting Requirements (continued)

3. The permittee of a source subject to this subpart shall submit periodic reports on a semi-annual basis, covering the periods from January 1 through June 30 and July 1 through December 31 of each year. The report shall contain the information in paragraphs (a) and (b) below and shall be submitted semiannually starting 6 months after December 28, 1997. The first periodic report shall cover the first 6 months after December 28, 1997. Each subsequent periodic report shall cover the 6-month period following the preceding period.
- a. For each process unit complying with the provisions of sections 63.163 through 63.174 of 40 CFR Part 63, Subpart H, the summary information listed in paragraphs (i) through (xv) below for each monitoring period during the 6-month period shall be submitted:
- i. the number of valves for which leaks were detected as described in sections A.III.8 and A.III.8.a through A.III.8.b of these terms and conditions, the percent leakers, and the total number of valves monitored;
- ii. the number of valves for which leaks were not repaired as required in sections A.III.8.h through A.III.8.k of these terms and conditions, identifying the number of those that are determined nonrepairable;
- iii. the number of pumps for which leaks were detected as described in sections A.III.3 and A.III.3.a through A.III.3.b of these terms and conditions, the percent leakers, and the total number of pumps monitored;
- iv. the number of pumps for which leaks were not repaired as required in sections A.III.3.c through A.III.3.e of these terms and conditions;
- v. the number of compressors for which leaks were detected as described in section A.III.4.f of these terms and conditions;

IV. Reporting Requirements (continued)

- vi. the number of compressors for which leaks were not repaired as required in sections A.III.4.g through A.III.4.h of these terms and conditions;
 - vii. the number of agitators for which leaks were detected as described in sections A.III.13 and A.III.13.a through A.III.13.b of these terms and conditions;
 - viii. the number of agitators for which leaks were not repaired as required in section A.III.13.c of these terms and conditions;
 - ix. the number of connectors for which leaks were detected as described in sections A.III.14 and A.III.14.a through A.III.14.b of these terms and conditions, the percent of connectors leaking, and the total number of connectors monitored;
 - x. the number of connectors for which leaks were not repaired as required in section A.III.14.f of these terms and conditions, identifying the number of those that are determined nonreparable;
 - xi. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible;
 - xii. the results of all monitoring to show compliance with section 63.164(i) of 40 CFR Part 63, Subpart H, section A.III.5 of these terms and conditions, and section A.III.12.e of these terms and conditions conducted within the semiannual reporting period;
 - xiii. if applicable, the initiation of a monthly monitoring program under section A.III.8.d.i.(a) of these terms and conditions, or a quality improvement program under either sections A.III.16 or A.III.17 and A.III.17.a through A.III.17.g;
 - xiv. if applicable, notification of a change in connector monitoring alternatives as described in section A.III.14.d of these terms and conditions; and
 - xv. if applicable, the compliance option that has been selected under section A.III.12.k of these terms and conditions.
- b. The information listed in section A.IV.2 of these terms and conditions for the Notification of Compliance Status for process units with later compliance dates shall be submitted, in addition to any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

Starting February 2, 2000, the periodic reports shall be submitted as part of the periodic reports required by paragraph 63.506(e)(6) of 40 CFR Part 63, Subpart U.

V. Testing Requirements

- 1. Monitoring, as required under 40 CFR Part 63, Subpart H, shall comply with the following requirements:
 - 1.a Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

- 1.b** i. Except as provided for in paragraph (ii) below, 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 (i) above, 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 (i) above.
- 1.c** 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.
- 1.d** 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 (a) through (c) below. 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 A.V.1.b.i of these terms and conditions. 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, in 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 (iii) below.
- (c) For Phase III, a mixture of methane or other compounds, as applicable, in air, at a concentration of approximately, but less than, 10,000 parts per million methane for agitators, 5,000 parts per million for pumps in polymerizing monomer service, and 500 parts per million for all other equipment, except as provided in paragraph (iii) below.
- 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 permittee need not calibrate the scales that will not be used during that day's monitoring.
- 1.e** 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.

V. Testing Requirements (continued)

- 1.f** Monitoring data that do not meet the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions may be used to qualify for less frequent monitoring under the provisions in sections A.III.8.d.ii and A.III.8.d.iii of these terms and conditions or sections A.III.14.c.iii.(b) or A.III.14.c.iii.(c) of these terms and conditions provided the data meet the conditions specified in paragraphs (i) and (ii) below.
- i. The data were obtained before April 22, 1994.
 - ii. The departures from the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions or from the specified monitoring frequency of section A.III.8.c of these terms and conditions 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 section A.V.1.b of these terms and conditions, 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.
- 2.** When equipment is monitored for compliance as required in sections 63.164(i) of 40 CFR Part 63, Subpart H, A.III.15 of these terms and conditions, and A.III.12.i of these terms and conditions or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by 40 CFR Part 63, Subpart H, the permittee may elect to adjust or not to adjust the instrument readings for background. If a permittee elects to not adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in sections A.V.1.a through A.V.1.d of these terms and conditions. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If a permittee elects to adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in paragraphs (a) through (d) below.
- a. The requirements of sections A.V.1.a through A.V.1.d of these terms and conditions shall apply.
 - b. The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - c. 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.
 - d. 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.

V. Testing Requirements (continued)

3.
 - a. 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 a permittee 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.
 - b. A permittee may use good engineering judgment rather than the procedures in paragraph (a) above to determine that the percent organic HAP content does not exceed 5 percent by weight. When a permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (a) above shall be used to resolve the disagreement.
 - c. Conversely, the permittee 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.
 - d. If a permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (a) above, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.
 - e. Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.
4. When a flare is used to comply with section A.III.12.c of these terms and conditions, the compliance determination shall be conducted using Method 22 of 40 CFR Part 60, Appendix A to determine visible emissions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: AN #61 (T042)

Activity Description: Acrylonitrile tank #61 - 12,000 gallon horizontal storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
12,000-gallon fixed roof storage tank - tank #61	OAC rule 3745-21-07(D)	See A.I.2.a below.
	40 CFR Part 63, Subpart U	See A.III below.

2. Additional Terms and Conditions

- 2.a No person shall place, store, or hold in any stationary storage vessel of more than five hundred gallons capacity any volatile photochemically reactive material unless such vessel is equipped with a permanent submerged fill pipe, is loaded through the use of a portable loading tube which can be inserted below the liquid level line during loading operations, or is a pressure tank as described in OAC rule 3745-21-07(D)(1) or is fitted with a vapor recovery system as described in OAC rule 3745-21-07(D)(1)(b).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Each piece of equipment in a process unit to which 40 CFR Part 63, Subpart H 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 2.** When each leak is detected as specified in sections A.III.3.a and A.III.4.f; sections A.III.8.b and A.III.9.a; and sections A.III.12.g, A.III.13.a, and A.III.14.b of these terms and conditions, the following requirements apply:
 - a.** A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - b.** The identification on a valve may be removed after it has been monitored as specified in sections A.III.8.j and A.III.17.g.i.(d) of these terms and conditions, and no leak has been detected during the follow-up monitoring. If the permittee elects to comply using the provisions of section A.III.14.d.i of these terms and conditions, the identification on a connector may be removed after it is monitored as specified in section A.III.14.d.i of these terms and conditions and no leak is detected during that monitoring.
 - c.** 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 A.III.14.d.i of these terms and conditions, may be removed after it has been repaired.
- 3.** The permittee shall monitor each pump in light liquid service monthly to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions and shall comply with the following requirements:
 - 3.a** The instrument reading for pumps in light liquid service, as determined by the method as specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, that defines a leak in each phase of the standard is:
 - i.** for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii.** for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 5,000 parts per million or greater; and
 - iii.** for Phase III beginning January 30, 2000, an instrument reading of 5,000 parts per million or greater for pumps handling polymerizing monomers and an instrument reading of 1,000 parts per million or greater for all other pumps.
 - 3.b** Each pump in light liquid service 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.
 - 3.c** 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 A.III.11 of these terms and conditions.
 - 3.d** A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - 3.e** For pumps in light liquid service, the first attempts at repair shall include, but are not limited to, the following practices where practicable:
 - i.** tightening of packing gland nuts; and
 - ii.** ensuring that the seal flush is operating at design pressure and temperature.
 - 3.f** The permittee 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 permittee has decided, all subsequent percent calculations shall be made on the same basis.

III. Monitoring and/or Record Keeping Requirements (continued)

- 3.g** If, in Phase III, calculated on a rolling, 6-month average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the permittee shall implement a quality improvement program for pumps that complies with the requirements of sections A.III.18, A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
- 3.h** 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.
- 3.i** 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 sections A.III.3 and A.III.3a of these terms and conditions;

PT = total pumps in organic HAP service, including those meeting the criteria in sections 63.163(e) and 63.163(f) of 40 CFR Part 63, Subpart H; and

PS = number of pumps leaking within 1 month of start-up during the current monitoring period.

- 4.** 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.
- 4.a** Each compressor seal system as required in section A.III.4 of these terms and condition shall be:
- i. operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. 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 sections A.III.12 and A.III.12.a through A.III.12.k; or
 - iii. equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- 4.b** The barrier fluid shall not be in light liquid service.
- 4.c** Each barrier fluid system as described in sections A.III.4, A.III.4.a, and A.III.4.b of these terms and conditions shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- 4.d** Each sensor as required in section A.III.4.c of these terms and conditions shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- 4.e** The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 4.f** If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under section A.III.4.e of these terms and conditions, a leak is detected.
- 4.g** 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 A.III.11 of these terms and conditions.
- 4.h** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

5. 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 below, as measured by the method specified in section A.V.2 of these terms and conditions.
 - a. 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 A.III.11 of these terms and conditions.
 - b. 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 A.V.2 of these terms and conditions.
6. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured. Each closed-purge, closed-loop, or closed-vent system shall:
 - a. return the purged process fluid directly to the process line; or
 - b. collect and recycle the purged process fluid to a process; or
 - c. be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of sections A.III.12 and A.III.12.a through A.III.12k; or
 - d. collect, store, and transport the purged process fluid to a system or facility identified below:
 - i. a waste management unit as defined in section 63.111 of 40 CFR Part 63, Subpart G, 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 (If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR Part 63, Subpart G, 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.); or
 - 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.
7. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - 7.a 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.
 - 7.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.
 - 7.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 sections A.III.7.a and A.III.7.b of these terms and conditions at all other times.
8. The permittee shall monitor all valves that are either in gas service or in light liquid service at the intervals specified in sections A.III.8.c and A.III.8.d of these terms and conditions and shall comply with the following requirements:
 - 8.a The valves shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.b** The instrument reading that defines a leak in a valve in each phase of the standard is:
- i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 500 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 500 parts per million or greater.
- 8.c** In Phases I and II, each valve shall be monitored quarterly.
- 8.d** In Phase III, the permittee shall monitor valves for leaks at the intervals specified below:
- i. At process units with 2 percent or greater leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, the permittee shall either:
 - (a) monitor each valve once per month; or
 - (b) within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and monitor quarterly.
 - ii. At process units with less than 2 percent leaking valves, the permittee shall monitor each valve once each quarter, except as provided in paragraphs (iii) and (iv) below.
 - iii. At process units with less than 1 percent leaking valves, the permittee may elect to monitor each valve once every 2 quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the permittee may elect to monitor each valve once every 4 quarters.
- 8.e** 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 sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions;
- VL = number of valves found leaking, excluding nonrepairables as provided in section A.III.8.g of these terms and conditions;
- VT = total valves monitored in a monitoring period, excluding valves monitored as required by section A.III.8.j of these terms and conditions; and
- VC = optional credit for removed valves = $0.67 \times$ 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 $VC = 0$).
- 8.f** For use in determining monitoring frequency, as specified in section A.III.8.d of these terms and conditions, 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.g** 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 (ii) below. 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.
- 8.h** 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 A.III.11 of these terms and conditions.
- 8.i** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 8.j** 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 sections A.V.1 and A.V.1.a through A.V.1.f and section A.V.2, as appropriate, to determine whether the valve has resumed leaking.
- ii. Periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions may be used to satisfy the requirements of this section, if the timing of the monitoring period coincides with the time specified in this section. Alternatively, other monitoring may be performed to satisfy the requirements of this section, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this section.
- iii. If a leak is detected by monitoring that is conducted pursuant to this section, the permittee shall follow the provisions of paragraphs (a) and (b) below, to determine whether that valve must be counted as a leaking valve for purposes of sections A.III.8.e through A.III.8.g of these terms and conditions.
- (a) If the permittee elected to use periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions to satisfy the requirements of this section, then the valve shall be counted as a leaking valve.
- (b) If the permittee elected to use other monitoring, prior to the periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions, to satisfy the requirements 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.
- 8.k** First attempts at repair include, but are not limited to, the following 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.
- 9.** 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 by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions within 5 calendar days if evidence is found of a potential leak to the atmosphere by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in sections A.III.9.b and A.III.9.c of these terms and conditions, it is not necessary to monitor the system for leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 9.a** 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 or pumps subject to section A.III.3.a.iii.(c), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- 9.b**
- i. 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 A.III.11 of these terms and conditions.
 - ii. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - iii. For equipment identified in section A.III.9 of these terms and conditions that is not monitored by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, 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.
- 9.c** First attempts at repair include, but are not limited to, the practices described under sections A.III.3.d through A.III.3.e and section A.III.8.k of these terms and conditions, for pumps and valves, respectively.
- 10.** No later than September 5, 1999, 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 40 CFR Part 63, Subpart H 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 sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions or shall comply with the requirements of sections 63.119(b) or (c) of 40 CFR Part 63, Subpart G.
- 11.**
- a. Delay of repair of equipment for which leaks have been detected is allowed if the repair 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:
 - i. the permittee 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
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions.
 - d. Delay of repair for pumps is also allowed if:
 - i. repair requires replacing the existing seal design with a new system that the permittee has determined under the provisions of sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions will provide better performance: or
 - (a) a dual mechanical seal system that meets the requirements of section 63.163(e) of 40 CFR Part 63, Subpart H;
 - (b) a pump that meets the requirements of section 63.163(f) of 40 CFR Part 63, Subpart H; or
 - (c) a closed-vent system and control device that meets the requirements of section 63.163(g) of 40 CFR Part 63, Subpart H; and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

III. Monitoring and/or Record Keeping Requirements (continued)

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.

- 12.** Closed-vent systems and control devices used to comply with provisions of 40 CFR Part 63, Subpart H shall comply with the following:
- 12.a** 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 per 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 of 40 CFR Part 63, Subpart H.
- 12.b** 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 second at a minimum temperature of 760 degrees Celsius.
- 12.c** Flares used to comply with 40 CFR Part 63, Subpart H shall comply with the requirements of section 63.11(b) of 40 CFR Part 63, Subpart A.
- 12.d** Control devices that are used to comply with the provisions of 40 CFR Part 63, Subpart H shall be monitored to ensure that the control devices are operated and maintained in conformance with their design.
- 12.e** Each closed-vent system shall be inspected according to the procedures and schedule specified below:
- i. If the closed-vent system is constructed of hard-piping, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - ii. If the vapor collection system or closed-vent system is constructed of duct work, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual inspections according to the procedures in section A.III.12.f of these terms and conditions.
- 12.f** Each closed-vent system shall be inspected according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 12.g** 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 section A.III.12.h of these terms and conditions.
- i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - ii. Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in section A.III.12.h of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 12.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 permittee 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 completed by the end of the next process unit shutdown.
- 12.i** 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 permittee shall comply with either paragraph (i) or (ii) below, except as provided in paragraph (iii) below.
- i. 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 40 CFR Part 63, Subpart G. The flow indicator shall be installed at the entrance to any bypass line; or
- ii. 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.
- iii. 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.
- 12.j** Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of 40 CFR Part 63, Subpart H, such system or control device shall be operating.
- 12.k** The permittee of any control device subject to 40 CFR Part 63, Subpart H that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 63, Subpart H, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart H. The permittee shall identify which option has been chosen, in the next periodic report required by section A.IV.3 of these terms and conditions.
- 13.** Each agitator in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 13.a** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- 13.b** i. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
- ii. If there are indications of liquids dripping from the agitator, a leak is detected.
- 13.c** i. 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 A.III.11 of these terms and conditions.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 14.** The permittee shall monitor all connectors in gas/vapor and light liquid service at the intervals specified in section A.III.14.c of these terms and conditions.
- 14.a** The connectors shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 14.b** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.c The permittee shall monitor for leaks at the intervals specified in either paragraph (i) or (ii) and in paragraph (iii) below:

- i. For each group of existing process units within an existing source, by no later than January 31, 1998, the permittee shall monitor all connectors.
- ii. For new sources, within the first 12 months after initial start-up or January 31, 1998, whichever is later, the permittee shall monitor all connectors.
- iii. After conducting the initial survey required in paragraph (i) or (ii) above, the permittee shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (a) through (e) below, except as provided in section A.III.14.e of these terms and conditions:
 - (a) 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.
 - (b) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The permittee 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.
 - (c) If the permittee 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 permittee may monitor the connectors one time every 4 years. The permittee 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.
 - (d) If a process unit complying with the requirements 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 permittee shall increase the monitoring frequency to one time every 2 years. The permittee 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 permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.
 - (e) If a process unit complying with requirements of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the permittee shall increase the monitoring frequency to one time per year. The permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.

The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.d** i. Except as provided in paragraph (ii) below, 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 section A.III.14.f of these terms and conditions, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of section A.III.14.g.ii of these terms and conditions.
- ii. As an alternative to the requirements in paragraph (i) above, a permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the permittee may not count nonrepairable connectors for the purposes of section A.III.14.g.ii of these terms and conditions. The permittee shall calculate the percent leaking connectors for the monitoring periods described in section A.III.14.c, by setting the nonrepairable component, CAN, in the equation in section A.III.14.g.ii to zero for all monitoring periods.
- iii. A permittee may switch alternatives described in paragraphs (i) and (ii) above at the end of the current monitoring period, provided that it is reported as required in sections A.IV.1 through A.IV.3 of these terms and conditions 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.
- 14.e** As an alternative to the requirements for sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) of these terms and conditions, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before September 5, 1996 may:
- i. comply with the requirements of section A.III.9 and A.III.9 .a through A.III.9.c of these terms and conditions; and
- ii. be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutant 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 section A.III.14.f of these terms and conditions.
- 14.f** 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 63.174(g) of 40 CFR Part 63, Subpart H and in section A.III.11 of these terms and conditions. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.g For use in determining the monitoring frequency, as specified in section A.III.14.c, the percent leaking connectors shall be calculated as specified in paragraphs (i) and (ii) below:

(i) For the first monitoring period, use the following equation:

$$\% \text{ CL} = \text{CL}/(\text{Ct} + \text{CC}) \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

Ct = total number of monitored connectors in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

(ii) For subsequent monitoring periods, use the following equation:

$$\% \text{ CL} = [(\text{CL} - \text{CAN})/(\text{Ct} + \text{CC})] \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

CAN = number of allowable nonrepairable connectors, as determined by monitoring required in sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) and sections A.III.14.d through A.III.14.e of these terms and conditions, not to exceed 2 percent of the total connector population, Ct;

Ct = total number of monitored connectors, including nonrepairables, in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.h** Optional credit for removed connectors. If the permittee eliminates a connector subject to monitoring under section A.III.14.c of these terms and conditions, the permittee may receive credit for elimination of the connector, as described in section A.III.14.g of these terms and conditions, provided the requirements in paragraphs (i) through (iv) below are met.
- (i) The connector was welded after July 31, 1997.
 - (ii) The integrity of the weld is demonstrated by monitoring it according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.
 - (iii) Welds created after June 12, 1995 to September 4, 1996 shall be monitored or tested by October 31, 1997.
 - (iv) Welds created after September 5, 1996 shall be monitored or tested within 3 months after being welded.
 - (v) 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 40 CFR Part 63, Subpart H.
- 15.**
- a. In Phase III, the permittee may elect to comply with one of the alternative quality improvement programs specified in sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. The decision to use one of these alternative provisions to comply with the requirements of section A.III.8.d.i.(b) of these terms and conditions must be made during the first year of Phase III for existing process units and for new process units.
 - b. The permittee of a process unit subject to the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions 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 sections A.III.8.e through A.III.8.g of these terms and conditions.
 - c. After the process unit has fewer than 2 percent leaking valves, the permittee may elect to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, to continue to comply with the requirements in section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, or comply with both the requirements.
 - i. If the permittee elects to continue the quality improvement program, the permittee is exempt from the requirements for performance trials as specified in section A.III.17.f of these terms and conditions, or further progress as specified in section A.III.16.d of these terms and conditions, as long as the process unit has fewer than 2 percent leaking valves calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions.
 - ii. If the permittee elects to comply with both sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in sections A.III.8.d.ii, A.III.8.d.iii and A.III.8.d.iv of these terms and conditions.
 - iii. If the permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

16. A permittee who elects to use a quality improvement program to demonstrate further progress shall meet the following requirements:
- a. The permittee shall continue to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except each valve shall be monitored quarterly.
 - b. The permittee shall collect the following data, and maintain records as required in section A.III.26.a of these terms and conditions, 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; and
 - iii. if a leak is detected, the repair methods used and the instrument readings after repair.
 - c. The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
 - d. The permittee must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of this section, except as provided in paragraphs (ii) and (iii) below.
 - 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:

$$\%LVR = (\%LVAVG1 - \%LVAVG2 / \%LVAVG1) \times 100$$

where:

$\%LVR$ = percent leaking valve reduction;

$\%LVAVG1 = (\%VLi + \%VLi+1)/2$; and

$\%LVAVG2 = (\%VLi+1 + \%VLi+2)/2$;

III. Monitoring and/or Record Keeping Requirements (continued)

where:

%V_{Li}, %V_{Li+1}, %V_{Li+2} are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

ii. A permittee 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 A.III.8.d.i.(a) of these terms and conditions using monthly monitoring or shall comply using a quality improvement program for technology review as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. If the permittee elects to comply with the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, the schedule for performance trials and valve replacements remains as specified in section A.III.17 of these terms and conditions.

iii. As an alternative to the provisions in paragraph (i) above, a permittee may use the procedure specified in paragraphs (a) and (b) below 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 = percent reduction required each quarter, as calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions; and

%VL = percent leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, at the time elected to use provisions of section A.III.8.d.i.(b) of these terms and conditions.

(b) The permittee shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section A.III.16 of these terms and conditions.

- 17.** A permittee who elects to use a quality improvement program for technology review and improvement shall meet the following requirements:
- 17.a** The permittee shall comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except the requirement for monthly monitoring in A.III.8.d.i.(a) of these terms and conditions does not apply.
- 17.b** The permittee shall collect the data specified below, and maintain records as required in section A.III.26.b of these terms and conditions, 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; and
 - 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.c** The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- 17.d** The permittee 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.
- 17.e**
- i. The permittee shall analyze the data collected to comply with the requirements of section A.III.17.b of these terms and conditions 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 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 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.g** Each permittee 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 section A.III.17.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.17.f of these terms and conditions, 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 permittee of the process unit, by the vendor, or by a designated representative. The permittee 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 sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions 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 permittee 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.
- 18.**
- a. In Phase III, if, on a rolling, 6-month 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 permittee shall comply with the requirements in sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
 - b. The permittee 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 rolling, 6-month average, in the process unit (or plant site). Once the performance level is achieved, the permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.
 - 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 rolling, 6-month average, the permittee shall resume the quality improvement program starting at performance trials.

III. Monitoring and/or Record Keeping Requirements (continued)

d. 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 (ii) below.

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.

19. The quality improvement program for pumps shall include the following:

19.a The permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

19.b The permittee shall collect the following data, and maintain records as required in section A.III.26.c of these terms and conditions, 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; and

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.

19.c The permittee shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

19.d The permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.e** i. The permittee shall analyze the data collected to comply with the requirements of section A.III.19.b of these terms and conditions 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.g** Each permittee 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 section A.III.19.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.19.f of these terms and conditions, 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 permittee 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.
- 20.** If more than one process unit is subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the recordkeeping requirements for these process units in one recordkeeping 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.
- 21.** The permittee shall have recorded the following information pertaining to all equipment in each process unit subject to the requirements in sections A.III.1 through A.III.12 of these terms and conditions:
- 21.a** A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in section 63.174 of 40 CFR Part 63, Subpart H and instrumentation systems) subject to the requirements of 40 CFR Part 63, Subpart H. 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 A.III.14.c.i or A.III.14.c.ii of these terms and conditions.
 - 21.b** A schedule by process unit for monitoring connectors subject to section A.III.14 of these terms and conditions and valves subject to section A.III.8 of these terms and conditions.
 - 21.c** Equipment subject to the provisions of this subpart shall be identified on a plant site plan, in log entries, or by other appropriate methods. Physical tagging of the equipment to indicate that it is in organic HAP service is not required.

III. Monitoring and/or Record Keeping Requirements (continued)

- 21.d** A list of identification numbers for equipment that the permittee elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), 63.164(h), 63.165(c), or 63.173(f) of 40 CFR Part 63, Subpart H.
- 21.e** A list of identification numbers for compressors that the permittee 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 40 CFR Part 63, Subpart H.
- 21.f** Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the permittee elects to equip with a closed-vent system and control device, under the provisions of section A.III.10 of these terms and conditions.
- 21.g** A list of identification numbers for pressure relief devices subject to section A.III.5 of these terms and conditions.
- 21.h** A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of 40 CFR Part 63, Subpart H.
- 21.i** Identification of instrumentation systems subject to the provisions of 40 CFR Part 63, Subpart H. Individual components in an instrumentation system need not be identified.
- 21.j** Identification of screwed connectors subject to the requirements of section A.III.14.e of these terms and conditions. Identification can be by area or grouping as long as the total number within each group or area is recorded.
- 21.k** 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 40 CFR Part 63, Subpart H and an explanation of the design criteria; and
 - ii. any changes to these criteria and the reasons for the changes.
- 21.l** The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of sections 63.168(h) and (i) of 40 CFR Part 63, Subpart H, agitators subject to the provisions of sections 63.173(h) through (j), and connectors subject to the provisions of sections 63.174(f) and (g) of 40 CFR Part 63, Subpart H 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; and
 - 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.
- 21.m** A list of valves removed from and added to the process unit, as described in section A.III.8.e of these terms and conditions, if the net credits for removed valves is expected to be used.
- 21.n** A list of connectors removed from and added to the process unit, as described in section A.III.14.g.(i) of these terms and conditions, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of 40 CFR Part 63, Subpart H. This is not required unless the net credits for removed connectors is expected to be used.
- 22.** For visual inspections of equipment subject to the provisions of this 40 CFR Part 63, Subpart H, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions for leaking equipment identified in this inspection. These records shall be retained for 2 years.

III. Monitoring and/or Record Keeping Requirements (continued)

- 23.** 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 40 CFR Part 63, Subpart H, the following information shall be recorded and kept for 2 years:
- 23.a** The instrument and the equipment identification number and the operator name, initials, or identification number.
 - 23.b** The date the leak was detected and the date of the first attempt to repair the leak.
 - 23.c** The date of successful repair of the leak.
 - 23.d** Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.
 - 23.e** "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 permittee 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) of 40 CFR Part 63, Subpart A, 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.
 - 23.f** Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - 23.g** 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 A.III.14.c of these terms and conditions, as described in section A.III.14.d of these terms and conditions, unless the permittee elects to comply with the provisions of section A.III.14.d.ii of these terms and conditions.
 - 23.h** The date and results of monitoring as required in sections A.III.14.d through A.III.14.e of these terms and conditions. If identification of connectors that have been opened or otherwise had the seal broken is made by location under section A.III.23.g of these terms and conditions, then all connectors within the designated location shall be monitored.
 - 23.i** Copies of the periodic reports as specified in section A.IV.3 of these terms and conditions, if records are not maintained on a computerized database capable of generating summary reports from the records.
- 24.** The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) of 40 CFR Part 63, Subpart H and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in section A.III.5 of these terms and conditions. The results shall include:
- a. the background level measured during each compliance test; and
 - b. the maximum instrument reading measured at each piece of equipment during each compliance test.

III. Monitoring and/or Record Keeping Requirements (continued)

- 25.** The permittee shall maintain records of the information specified below for closed-vent systems and control devices. The records specified in paragraph (a) below shall be retained for the life of the equipment. The records specified in paragraphs (b) and (c) below shall be retained for 2 years.
- a. The design specifications and performance demonstrations specified below:
 - 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 40 CFR Part 63; and
 - iv. a description of the parameter or parameters monitored, as required in section A.III.12.d of these terms and conditions, 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.
 - b. Records of operation of closed-vent systems and control devices, as specified below:
 - i. dates and durations when the closed-vent systems and control devices 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; and
 - iii. dates and durations of start-ups and shutdowns of control devices.
 - c. Records of inspections of closed-vent systems as specified below:
 - i. for each inspection conducted 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; and
 - ii. for each inspection conducted during which leaks were detected, the information specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions shall be recorded.
- 26.** Each permittee of a process unit subject to the requirements of sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.h of these terms and conditions shall maintain the records specified in sections A.III.26.a through A.III.26.i of these terms and conditions for the period of the quality improvement program for the process unit.
- 26.a** For permittees who elect to use a reasonable further progress quality improvement program, as specified in section A.III.16 of these terms and conditions:
- i. all data required in section A.III.16.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter; and
 - iii. the beginning and ending dates while meeting the requirements of section A.III.16 of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.b** For permittees who elect to use a quality improvement program of technology review and improvement, as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions:
- i. all data required in section A.III.17.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter;
 - iii. documentation of all inspections conducted under the requirements of section A.III.17.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions.
- 26.c** For permittees subject to the requirements of the pump quality improvement program as specified in sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions:
- i. all data required in section A.III.19.b of these terms and conditions;
 - ii. the rolling average percent leaking pumps;
 - iii. documentation of all inspections conducted under the requirements of section A.III.19.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions.
- 26.d** 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.
- 26.e** Records of all analyses required in sections A.III.17 and A.III.17.a through A.III.17.g and A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions. The records shall 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 A.III.17.f.iii and A.III.19.f.iii of these terms and conditions; and
 - iv. the beginning date and duration of performance trials of each candidate superior emission performing technology.
- 26.f** All records documenting the quality assurance program for valves or pumps as specified in sections A.III.17.g and A.III.19.g of these terms and conditions.
- 26.g** 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 sections A.III.17.g and A.III.19.g of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.h** Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) below:
- i. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) of this section.
- (a) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (b) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (c) 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.
- 26.i** 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 Sec. 63.160 of 40 CFR Part 63, Subpart H.

IV. Reporting Requirements

1. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit the reports listed in paragraphs (a) and (b) below:
 - (a) a 'Notification of Compliance Status' report described in section A.IV.2 of these terms and conditions; and
 - (b) periodic reports described in section A.IV.3 of these terms and conditions.
2. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit a Notification of Compliance Status by December 28, 1997. The notification shall provide the information listed below in paragraphs (a) through (d) for each process unit subject to the requirements of sections 63.163 through Sec. 63.174 of 40 CFR Part 63, Subpart H:
 - a. process unit identification;
 - b. number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service;
 - c. method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and
 - d. planned schedule for each phase of the requirements in sections A.III.3.a and A.III.8.b of these terms and conditions.

IV. Reporting Requirements (continued)

3. The permittee of a source subject to this subpart shall submit periodic reports on a semi-annual basis, covering the periods from January 1 through June 30 and July 1 through December 31 of each year. The report shall contain the information in paragraphs (a) and (b) below and shall be submitted semiannually starting 6 months after December 28, 1997. The first periodic report shall cover the first 6 months after December 28, 1997. Each subsequent periodic report shall cover the 6-month period following the preceding period.
- a. For each process unit complying with the provisions of sections 63.163 through 63.174 of 40 CFR Part 63, Subpart H, the summary information listed in paragraphs (i) through (xv) below for each monitoring period during the 6-month period shall be submitted:
- i. the number of valves for which leaks were detected as described in sections A.III.8 and A.III.8.a through A.III.8.b of these terms and conditions, the percent leakers, and the total number of valves monitored;
- ii. the number of valves for which leaks were not repaired as required in sections A.III.8.h through A.III.8.k of these terms and conditions, identifying the number of those that are determined nonrepairable;
- iii. the number of pumps for which leaks were detected as described in sections A.III.3 and A.III.3.a through A.III.3.b of these terms and conditions, the percent leakers, and the total number of pumps monitored;
- iv. the number of pumps for which leaks were not repaired as required in sections A.III.3.c through A.III.3.e of these terms and conditions;
- v. the number of compressors for which leaks were detected as described in section A.III.4.f of these terms and conditions;

IV. Reporting Requirements (continued)

- vi. the number of compressors for which leaks were not repaired as required in sections A.III.4.g through A.III.4.h of these terms and conditions;
 - vii. the number of agitators for which leaks were detected as described in sections A.III.13 and A.III.13.a through A.III.13.b of these terms and conditions;
 - viii. the number of agitators for which leaks were not repaired as required in section A.III.13.c of these terms and conditions;
 - ix. the number of connectors for which leaks were detected as described in sections A.III.14 and A.III.14.a through A.III.14.b of these terms and conditions, the percent of connectors leaking, and the total number of connectors monitored;
 - x. the number of connectors for which leaks were not repaired as required in section A.III.14.f of these terms and conditions, identifying the number of those that are determined nonreparable;
 - xi. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible;
 - xii. the results of all monitoring to show compliance with section 63.164(i) of 40 CFR Part 63, Subpart H, section A.III.5 of these terms and conditions, and section A.III.12.e of these terms and conditions conducted within the semiannual reporting period;
 - xiii. if applicable, the initiation of a monthly monitoring program under section A.III.8.d.i.(a) of these terms and conditions, or a quality improvement program under either sections A.III.16 or A.III.17 and A.III.17.a through A.III.17.g;
 - xiv. if applicable, notification of a change in connector monitoring alternatives as described in section A.III.14.d of these terms and conditions; and
 - xv. if applicable, the compliance option that has been selected under section A.III.12.k of these terms and conditions.
- b. The information listed in section A.IV.2 of these terms and conditions for the Notification of Compliance Status for process units with later compliance dates shall be submitted, in addition to any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

Starting February 2, 2000, the periodic reports shall be submitted as part of the periodic reports required by paragraph 63.506(e)(6) of 40 CFR Part 63, Subpart U.

V. Testing Requirements

- 1. Monitoring, as required under 40 CFR Part 63, Subpart H, shall comply with the following requirements:
 - 1.a Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

- 1.b** i. Except as provided for in paragraph (ii) below, 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 (i) above, 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 (i) above.
- 1.c** 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.
- 1.d** 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 (a) through (c) below. 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 A.V.1.b.i of these terms and conditions. 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, in 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 (iii) below.
- (c) For Phase III, a mixture of methane or other compounds, as applicable, in air, at a concentration of approximately, but less than, 10,000 parts per million methane for agitators, 5,000 parts per million for pumps in polymerizing monomer service, and 500 parts per million for all other equipment, except as provided in paragraph (iii) below.
- 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 permittee need not calibrate the scales that will not be used during that day's monitoring.
- 1.e** 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.

V. Testing Requirements (continued)

- 1.f** Monitoring data that do not meet the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions may be used to qualify for less frequent monitoring under the provisions in sections A.III.8.d.ii and A.III.8.d.iii of these terms and conditions or sections A.III.14.c.iii.(b) or A.III.14.c.iii.(c) of these terms and conditions provided the data meet the conditions specified in paragraphs (i) and (ii) below.
- i. The data were obtained before April 22, 1994.
 - ii. The departures from the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions or from the specified monitoring frequency of section A.III.8.c of these terms and conditions 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 section A.V.1.b of these terms and conditions, 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.
- 2.** When equipment is monitored for compliance as required in sections 63.164(i) of 40 CFR Part 63, Subpart H, A.III.15 of these terms and conditions, and A.III.12.i of these terms and conditions or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by 40 CFR Part 63, Subpart H, the permittee may elect to adjust or not to adjust the instrument readings for background. If a permittee elects to not adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in sections A.V.1.a through A.V.1.d of these terms and conditions. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If a permittee elects to adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in paragraphs (a) through (d) below.
- a. The requirements of sections A.V.1.a through A.V.1.d of these terms and conditions shall apply.
 - b. The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - c. 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.
 - d. 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.

V. Testing Requirements (continued)

3.
 - a. 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 a permittee 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.
 - b. A permittee may use good engineering judgment rather than the procedures in paragraph (a) above to determine that the percent organic HAP content does not exceed 5 percent by weight. When a permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (a) above shall be used to resolve the disagreement.
 - c. Conversely, the permittee 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.
 - d. If a permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (a) above, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.
 - e. Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.
4. When a flare is used to comply with section A.III.12.c of these terms and conditions, the compliance determination shall be conducted using Method 22 of 40 CFR Part 60, Appendix A to determine visible emissions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: Styrene - #62 (T043)

Activity Description: Styrene tank #62 - 12,000 gallon horizontal storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
12,000-gallon fixed roof storage tank - tank #62	OAC rule 3745-21-07(D)	See A.I.2.a below.
	40 CFR Part 63, Subpart U	See A.III below.

2. Additional Terms and Conditions

- 2.a No person shall place, store, or hold in any stationary storage vessel of more than five hundred gallons capacity any volatile photochemically reactive material unless such vessel is equipped with a permanent submerged fill pipe, is loaded through the use of a portable loading tube which can be inserted below the liquid level line during loading operations, or is a pressure tank as described in OAC rule 3745-21-07(D)(1) or is fitted with a vapor recovery system as described in OAC rule 3745-21-07(D)(1)(b).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Each piece of equipment in a process unit to which 40 CFR Part 63, Subpart H 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.

III. Monitoring and/or Record Keeping Requirements (continued)

2. When each leak is detected as specified in sections A.III.3.a and A.III.4.f; sections A.III.8.b and A.III.9.a; and sections A.III.12.g, A.III.13.a, and A.III.14.b of these terms and conditions, the following requirements apply:
 - a. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - b. The identification on a valve may be removed after it has been monitored as specified in sections A.III.8.j and A.III.17.g.i.(d) of these terms and conditions, and no leak has been detected during the follow-up monitoring. If the permittee elects to comply using the provisions of section A.III.14.d.i of these terms and conditions, the identification on a connector may be removed after it is monitored as specified in section A.III.14.d.i of these terms and conditions and no leak is detected during that monitoring.
 - c. 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 A.III.14.d.i of these terms and conditions, may be removed after it has been repaired.
3. The permittee shall monitor each pump in light liquid service monthly to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions and shall comply with the following requirements:
 - 3.a The instrument reading for pumps in light liquid service, as determined by the method as specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, that defines a leak in each phase of the standard is:
 - i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 5,000 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 5,000 parts per million or greater for pumps handling polymerizing monomers and an instrument reading of 1,000 parts per million or greater for all other pumps.
 - 3.b Each pump in light liquid service 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.
 - 3.c 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 A.III.11 of these terms and conditions.
 - 3.d A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - 3.e For pumps in light liquid service, the first attempts at repair shall include, but are not limited to, the following practices where practicable:
 - i. tightening of packing gland nuts; and
 - ii. ensuring that the seal flush is operating at design pressure and temperature.
 - 3.f The permittee 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 permittee has decided, all subsequent percent calculations shall be made on the same basis.

III. Monitoring and/or Record Keeping Requirements (continued)

- 3.g** If, in Phase III, calculated on a rolling, 6-month average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the permittee shall implement a quality improvement program for pumps that complies with the requirements of sections A.III.18, A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
- 3.h** 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.
- 3.i** 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 sections A.III.3 and A.III.3a of these terms and conditions;

PT = total pumps in organic HAP service, including those meeting the criteria in sections 63.163(e) and 63.163(f) of 40 CFR Part 63, Subpart H; and

PS = number of pumps leaking within 1 month of start-up during the current monitoring period.

- 4.** 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.
- 4.a** Each compressor seal system as required in section A.III.4 of these terms and condition shall be:
- i. operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. 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 sections A.III.12 and A.III.12.a through A.III.12.k; or
 - iii. equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- 4.b** The barrier fluid shall not be in light liquid service.
- 4.c** Each barrier fluid system as described in sections A.III.4, A.III.4.a, and A.III.4.b of these terms and conditions shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- 4.d** Each sensor as required in section A.III.4.c of these terms and conditions shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- 4.e** The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 4.f** If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under section A.III.4.e of these terms and conditions, a leak is detected.
- 4.g** 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 A.III.11 of these terms and conditions.
- 4.h** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

5. 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 below, as measured by the method specified in section A.V.2 of these terms and conditions.
 - a. 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 A.III.11 of these terms and conditions.
 - b. 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 A.V.2 of these terms and conditions.
6. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured. Each closed-purge, closed-loop, or closed-vent system shall:
 - a. return the purged process fluid directly to the process line; or
 - b. collect and recycle the purged process fluid to a process; or
 - c. be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of sections A.III.12 and A.III.12.a through A.III.12k; or
 - d. collect, store, and transport the purged process fluid to a system or facility identified below:
 - i. a waste management unit as defined in section 63.111 of 40 CFR Part 63, Subpart G, 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 (If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR Part 63, Subpart G, 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.); or
 - 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.
7. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - 7.a 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.
 - 7.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.
 - 7.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 sections A.III.7.a and A.III.7.b of these terms and conditions at all other times.
8. The permittee shall monitor all valves that are either in gas service or in light liquid service at the intervals specified in sections A.III.8.c and A.III.8.d of these terms and conditions and shall comply with the following requirements:
 - 8.a The valves shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.b** The instrument reading that defines a leak in a valve in each phase of the standard is:
- i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 500 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 500 parts per million or greater.
- 8.c** In Phases I and II, each valve shall be monitored quarterly.
- 8.d** In Phase III, the permittee shall monitor valves for leaks at the intervals specified below:
- i. At process units with 2 percent or greater leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, the permittee shall either:
 - (a) monitor each valve once per month; or
 - (b) within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and monitor quarterly.
 - ii. At process units with less than 2 percent leaking valves, the permittee shall monitor each valve once each quarter, except as provided in paragraphs (iii) and (iv) below.
 - iii. At process units with less than 1 percent leaking valves, the permittee may elect to monitor each valve once every 2 quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the permittee may elect to monitor each valve once every 4 quarters.
- 8.e** 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 sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions;
- VL = number of valves found leaking, excluding nonrepairables as provided in section A.III.8.g of these terms and conditions;
- VT = total valves monitored in a monitoring period, excluding valves monitored as required by section A.III.8.j of these terms and conditions; and
- VC = optional credit for removed valves = $0.67 \times$ 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 $VC = 0$).
- 8.f** For use in determining monitoring frequency, as specified in section A.III.8.d of these terms and conditions, 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.g** 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 (ii) below. 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.
- 8.h** 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 A.III.11 of these terms and conditions.
- 8.i** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 8.j** 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 sections A.V.1 and A.V.1.a through A.V.1.f and section A.V.2, as appropriate, to determine whether the valve has resumed leaking.
- ii. Periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions may be used to satisfy the requirements of this section, if the timing of the monitoring period coincides with the time specified in this section. Alternatively, other monitoring may be performed to satisfy the requirements of this section, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this section.
- iii. If a leak is detected by monitoring that is conducted pursuant to this section, the permittee shall follow the provisions of paragraphs (a) and (b) below, to determine whether that valve must be counted as a leaking valve for purposes of sections A.III.8.e through A.III.8.g of these terms and conditions.
- (a) If the permittee elected to use periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions to satisfy the requirements of this section, then the valve shall be counted as a leaking valve.
- (b) If the permittee elected to use other monitoring, prior to the periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions, to satisfy the requirements 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.
- 8.k** First attempts at repair include, but are not limited to, the following 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.
- 9.** 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 by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions within 5 calendar days if evidence is found of a potential leak to the atmosphere by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in sections A.III.9.b and A.III.9.c of these terms and conditions, it is not necessary to monitor the system for leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 9.a** 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 or pumps subject to section A.III.3.a.iii.(c), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- 9.b**
- i. 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 A.III.11 of these terms and conditions.
 - ii. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - iii. For equipment identified in section A.III.9 of these terms and conditions that is not monitored by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, 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.
- 9.c** First attempts at repair include, but are not limited to, the practices described under sections A.III.3.d through A.III.3.e and section A.III.8.k of these terms and conditions, for pumps and valves, respectively.
- 10.** No later than September 5, 1999, 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 40 CFR Part 63, Subpart H 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 sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions or shall comply with the requirements of sections 63.119(b) or (c) of 40 CFR Part 63, Subpart G.
- 11.**
- a. Delay of repair of equipment for which leaks have been detected is allowed if the repair 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:
 - i. the permittee 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
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions.
 - d. Delay of repair for pumps is also allowed if:
 - i. repair requires replacing the existing seal design with a new system that the permittee has determined under the provisions of sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions will provide better performance: or
 - (a) a dual mechanical seal system that meets the requirements of section 63.163(e) of 40 CFR Part 63, Subpart H;
 - (b) a pump that meets the requirements of section 63.163(f) of 40 CFR Part 63, Subpart H; or
 - (c) a closed-vent system and control device that meets the requirements of section 63.163(g) of 40 CFR Part 63, Subpart H; and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

III. Monitoring and/or Record Keeping Requirements (continued)

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.

- 12.** Closed-vent systems and control devices used to comply with provisions of 40 CFR Part 63, Subpart H shall comply with the following:
- 12.a** 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 per 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 of 40 CFR Part 63, Subpart H.
- 12.b** 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 second at a minimum temperature of 760 degrees Celsius.
- 12.c** Flares used to comply with 40 CFR Part 63, Subpart H shall comply with the requirements of section 63.11(b) of 40 CFR Part 63, Subpart A.
- 12.d** Control devices that are used to comply with the provisions of 40 CFR Part 63, Subpart H shall be monitored to ensure that the control devices are operated and maintained in conformance with their design.
- 12.e** Each closed-vent system shall be inspected according to the procedures and schedule specified below:
- i. If the closed-vent system is constructed of hard-piping, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - ii. If the vapor collection system or closed-vent system is constructed of duct work, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual inspections according to the procedures in section A.III.12.f of these terms and conditions.
- 12.f** Each closed-vent system shall be inspected according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 12.g** 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 section A.III.12.h of these terms and conditions.
- i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - ii. Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in section A.III.12.h of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 12.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 permittee 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 completed by the end of the next process unit shutdown.
- 12.i** 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 permittee shall comply with either paragraph (i) or (ii) below, except as provided in paragraph (iii) below.
- i. 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 40 CFR Part 63, Subpart G. The flow indicator shall be installed at the entrance to any bypass line; or
- ii. 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.
- iii. 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.
- 12.j** Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of 40 CFR Part 63, Subpart H, such system or control device shall be operating.
- 12.k** The permittee of any control device subject to 40 CFR Part 63, Subpart H that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 63, Subpart H, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart H. The permittee shall identify which option has been chosen, in the next periodic report required by section A.IV.3 of these terms and conditions.
- 13.** Each agitator in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 13.a** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- 13.b** i. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
- ii. If there are indications of liquids dripping from the agitator, a leak is detected.
- 13.c** i. 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 A.III.11 of these terms and conditions.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 14.** The permittee shall monitor all connectors in gas/vapor and light liquid service at the intervals specified in section A.III.14.c of these terms and conditions.
- 14.a** The connectors shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 14.b** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.c The permittee shall monitor for leaks at the intervals specified in either paragraph (i) or (ii) and in paragraph (iii) below:

- i. For each group of existing process units within an existing source, by no later than January 31, 1998, the permittee shall monitor all connectors.
- ii. For new sources, within the first 12 months after initial start-up or January 31, 1998, whichever is later, the permittee shall monitor all connectors.
- iii. After conducting the initial survey required in paragraph (i) or (ii) above, the permittee shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (a) through (e) below, except as provided in section A.III.14.e of these terms and conditions:
 - (a) 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.
 - (b) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The permittee 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.
 - (c) If the permittee 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 permittee may monitor the connectors one time every 4 years. The permittee 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.
 - (d) If a process unit complying with the requirements 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 permittee shall increase the monitoring frequency to one time every 2 years. The permittee 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 permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.
 - (e) If a process unit complying with requirements of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the permittee shall increase the monitoring frequency to one time per year. The permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.

The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.d** i. Except as provided in paragraph (ii) below, 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 section A.III.14.f of these terms and conditions, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of section A.III.14.g.ii of these terms and conditions.
- ii. As an alternative to the requirements in paragraph (i) above, a permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the permittee may not count nonrepairable connectors for the purposes of section A.III.14.g.ii of these terms and conditions. The permittee shall calculate the percent leaking connectors for the monitoring periods described in section A.III.14.c, by setting the nonrepairable component, CAN, in the equation in section A.III.14.g.ii to zero for all monitoring periods.
- iii. A permittee may switch alternatives described in paragraphs (i) and (ii) above at the end of the current monitoring period, provided that it is reported as required in sections A.IV.1 through A.IV.3 of these terms and conditions 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.
- 14.e** As an alternative to the requirements for sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) of these terms and conditions, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before September 5, 1996 may:
- i. comply with the requirements of section A.III.9 and A.III.9 .a through A.III.9.c of these terms and conditions; and
- ii. be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutant 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 section A.III.14.f of these terms and conditions.
- 14.f** 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 63.174(g) of 40 CFR Part 63, Subpart H and in section A.III.11 of these terms and conditions. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.g For use in determining the monitoring frequency, as specified in section A.III.14.c, the percent leaking connectors shall be calculated as specified in paragraphs (i) and (ii) below:

(i) For the first monitoring period, use the following equation:

$$\% \text{ CL} = \text{CL}/(\text{Ct} + \text{CC}) \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

Ct = total number of monitored connectors in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

(ii) For subsequent monitoring periods, use the following equation:

$$\% \text{ CL} = [(\text{CL} - \text{CAN})/(\text{Ct} + \text{CC})] \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

CAN = number of allowable nonrepairable connectors, as determined by monitoring required in sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) and sections A.III.14.d through A.III.14.e of these terms and conditions, not to exceed 2 percent of the total connector population, Ct;

Ct = total number of monitored connectors, including nonrepairables, in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.h** Optional credit for removed connectors. If the permittee eliminates a connector subject to monitoring under section A.III.14.c of these terms and conditions, the permittee may receive credit for elimination of the connector, as described in section A.III.14.g of these terms and conditions, provided the requirements in paragraphs (i) through (iv) below are met.
- (i) The connector was welded after July 31, 1997.
 - (ii) The integrity of the weld is demonstrated by monitoring it according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.
 - (iii) Welds created after June 12, 1995 to September 4, 1996 shall be monitored or tested by October 31, 1997.
 - (iv) Welds created after September 5, 1996 shall be monitored or tested within 3 months after being welded.
 - (v) 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 40 CFR Part 63, Subpart H.
- 15.**
- a. In Phase III, the permittee may elect to comply with one of the alternative quality improvement programs specified in sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. The decision to use one of these alternative provisions to comply with the requirements of section A.III.8.d.i.(b) of these terms and conditions must be made during the first year of Phase III for existing process units and for new process units.
 - b. The permittee of a process unit subject to the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions 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 sections A.III.8.e through A.III.8.g of these terms and conditions.
 - c. After the process unit has fewer than 2 percent leaking valves, the permittee may elect to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, to continue to comply with the requirements in section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, or comply with both the requirements.
 - i. If the permittee elects to continue the quality improvement program, the permittee is exempt from the requirements for performance trials as specified in section A.III.17.f of these terms and conditions, or further progress as specified in section A.III.16.d of these terms and conditions, as long as the process unit has fewer than 2 percent leaking valves calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions.
 - ii. If the permittee elects to comply with both sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in sections A.III.8.d.ii, A.III.8.d.iii and A.III.8.d.iv of these terms and conditions.
 - iii. If the permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

16. A permittee who elects to use a quality improvement program to demonstrate further progress shall meet the following requirements:
- a. The permittee shall continue to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except each valve shall be monitored quarterly.
 - b. The permittee shall collect the following data, and maintain records as required in section A.III.26.a of these terms and conditions, 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; and
 - iii. if a leak is detected, the repair methods used and the instrument readings after repair.
 - c. The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
 - d. The permittee must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of this section, except as provided in paragraphs (ii) and (iii) below.
 - 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:

$$\%LVR = (\%LVAVG1 - \%LVAVG2 / \%LVAVG1) \times 100$$

where:

$\%LVR$ = percent leaking valve reduction;

$\%LVAVG1 = (\%VLi + \%VLi+1)/2$; and

$\%LVAVG2 = (\%VLi+1 + \%VLi+2)/2$;

III. Monitoring and/or Record Keeping Requirements (continued)

where:

%V_{Li}, %V_{Li+1}, %V_{Li+2} are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

ii. A permittee 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 A.III.8.d.i.(a) of these terms and conditions using monthly monitoring or shall comply using a quality improvement program for technology review as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. If the permittee elects to comply with the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, the schedule for performance trials and valve replacements remains as specified in section A.III.17 of these terms and conditions.

iii. As an alternative to the provisions in paragraph (i) above, a permittee may use the procedure specified in paragraphs (a) and (b) below 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 = percent reduction required each quarter, as calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions; and

%VL = percent leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, at the time elected to use provisions of section A.III.8.d.i.(b) of these terms and conditions.

(b) The permittee shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section A.III.16 of these terms and conditions.

- 17.** A permittee who elects to use a quality improvement program for technology review and improvement shall meet the following requirements:
- 17.a** The permittee shall comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except the requirement for monthly monitoring in A.III.8.d.i.(a) of these terms and conditions does not apply.
- 17.b** The permittee shall collect the data specified below, and maintain records as required in section A.III.26.b of these terms and conditions, 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; and
 - 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.c** The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- 17.d** The permittee 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.
- 17.e**
- i. The permittee shall analyze the data collected to comply with the requirements of section A.III.17.b of these terms and conditions 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 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 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.g** Each permittee 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 section A.III.17.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.17.f of these terms and conditions, 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 permittee of the process unit, by the vendor, or by a designated representative. The permittee 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 sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions 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 permittee 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.
- 18.**
- a. In Phase III, if, on a rolling, 6-month 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 permittee shall comply with the requirements in sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
 - b. The permittee 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 rolling, 6-month average, in the process unit (or plant site). Once the performance level is achieved, the permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.
 - 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 rolling, 6-month average, the permittee shall resume the quality improvement program starting at performance trials.

III. Monitoring and/or Record Keeping Requirements (continued)

d. 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 (ii) below.

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.

19. The quality improvement program for pumps shall include the following:

19.a The permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

19.b The permittee shall collect the following data, and maintain records as required in section A.III.26.c of these terms and conditions, 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; and

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.

19.c The permittee shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

19.d The permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.e** i. The permittee shall analyze the data collected to comply with the requirements of section A.III.19.b of these terms and conditions 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.

III. Monitoring and/or Record Keeping Requirements (continued)

19.f 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.

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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.g** Each permittee 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 section A.III.19.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.19.f of these terms and conditions, 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 permittee 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.
- 20.** If more than one process unit is subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the recordkeeping requirements for these process units in one recordkeeping 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.
- 21.** The permittee shall have recorded the following information pertaining to all equipment in each process unit subject to the requirements in sections A.III.1 through A.III.12 of these terms and conditions:
- 21.a** A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in section 63.174 of 40 CFR Part 63, Subpart H and instrumentation systems) subject to the requirements of 40 CFR Part 63, Subpart H. 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 A.III.14.c.i or A.III.14.c.ii of these terms and conditions.
- 21.b** A schedule by process unit for monitoring connectors subject to section A.III.14 of these terms and conditions and valves subject to section A.III.8 of these terms and conditions.
- 21.c** Equipment subject to the provisions of this subpart shall be identified on a plant site plan, in log entries, or by other appropriate methods. Physical tagging of the equipment to indicate that it is in organic HAP service is not required.

III. Monitoring and/or Record Keeping Requirements (continued)

- 21.d** A list of identification numbers for equipment that the permittee elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), 63.164(h), 63.165(c), or 63.173(f) of 40 CFR Part 63, Subpart H.
- 21.e** A list of identification numbers for compressors that the permittee 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 40 CFR Part 63, Subpart H.
- 21.f** Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the permittee elects to equip with a closed-vent system and control device, under the provisions of section A.III.10 of these terms and conditions.
- 21.g** A list of identification numbers for pressure relief devices subject to section A.III.5 of these terms and conditions.
- 21.h** A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of 40 CFR Part 63, Subpart H.
- 21.i** Identification of instrumentation systems subject to the provisions of 40 CFR Part 63, Subpart H. Individual components in an instrumentation system need not be identified.
- 21.j** Identification of screwed connectors subject to the requirements of section A.III.14.e of these terms and conditions. Identification can be by area or grouping as long as the total number within each group or area is recorded.
- 21.k** 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 40 CFR Part 63, Subpart H and an explanation of the design criteria; and
 - ii. any changes to these criteria and the reasons for the changes.
- 21.l** The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of sections 63.168(h) and (i) of 40 CFR Part 63, Subpart H, agitators subject to the provisions of sections 63.173(h) through (j), and connectors subject to the provisions of sections 63.174(f) and (g) of 40 CFR Part 63, Subpart H 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; and
 - 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.
- 21.m** A list of valves removed from and added to the process unit, as described in section A.III.8.e of these terms and conditions, if the net credits for removed valves is expected to be used.
- 21.n** A list of connectors removed from and added to the process unit, as described in section A.III.14.g.(i) of these terms and conditions, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of 40 CFR Part 63, Subpart H. This is not required unless the net credits for removed connectors is expected to be used.
- 22.** For visual inspections of equipment subject to the provisions of this 40 CFR Part 63, Subpart H, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions for leaking equipment identified in this inspection. These records shall be retained for 2 years.

III. Monitoring and/or Record Keeping Requirements (continued)

- 23.** 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 40 CFR Part 63, Subpart H, the following information shall be recorded and kept for 2 years:
- 23.a** The instrument and the equipment identification number and the operator name, initials, or identification number.
 - 23.b** The date the leak was detected and the date of the first attempt to repair the leak.
 - 23.c** The date of successful repair of the leak.
 - 23.d** Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.
 - 23.e** "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 permittee 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) of 40 CFR Part 63, Subpart A, 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.
 - 23.f** Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - 23.g** 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 A.III.14.c of these terms and conditions, as described in section A.III.14.d of these terms and conditions, unless the permittee elects to comply with the provisions of section A.III.14.d.ii of these terms and conditions.
 - 23.h** The date and results of monitoring as required in sections A.III.14.d through A.III.14.e of these terms and conditions. If identification of connectors that have been opened or otherwise had the seal broken is made by location under section A.III.23.g of these terms and conditions, then all connectors within the designated location shall be monitored.
 - 23.i** Copies of the periodic reports as specified in section A.IV.3 of these terms and conditions, if records are not maintained on a computerized database capable of generating summary reports from the records.
- 24.** The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) of 40 CFR Part 63, Subpart H and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in section A.III.5 of these terms and conditions. The results shall include:
- a. the background level measured during each compliance test; and
 - b. the maximum instrument reading measured at each piece of equipment during each compliance test.

III. Monitoring and/or Record Keeping Requirements (continued)

- 25.** The permittee shall maintain records of the information specified below for closed-vent systems and control devices. The records specified in paragraph (a) below shall be retained for the life of the equipment. The records specified in paragraphs (b) and (c) below shall be retained for 2 years.
- a. The design specifications and performance demonstrations specified below:
 - 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 40 CFR Part 63; and
 - iv. a description of the parameter or parameters monitored, as required in section A.III.12.d of these terms and conditions, 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.
 - b. Records of operation of closed-vent systems and control devices, as specified below:
 - i. dates and durations when the closed-vent systems and control devices 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; and
 - iii. dates and durations of start-ups and shutdowns of control devices.
 - c. Records of inspections of closed-vent systems as specified below:
 - i. for each inspection conducted 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; and
 - ii. for each inspection conducted during which leaks were detected, the information specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions shall be recorded.
- 26.** Each permittee of a process unit subject to the requirements of sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.h of these terms and conditions shall maintain the records specified in sections A.III.26.a through A.III.26.i of these terms and conditions for the period of the quality improvement program for the process unit.
- 26.a** For permittees who elect to use a reasonable further progress quality improvement program, as specified in section A.III.16 of these terms and conditions:
- i. all data required in section A.III.16.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter; and
 - iii. the beginning and ending dates while meeting the requirements of section A.III.16 of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.b** For permittees who elect to use a quality improvement program of technology review and improvement, as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions:
- i. all data required in section A.III.17.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter;
 - iii. documentation of all inspections conducted under the requirements of section A.III.17.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions.
- 26.c** For permittees subject to the requirements of the pump quality improvement program as specified in sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions:
- i. all data required in section A.III.19.b of these terms and conditions;
 - ii. the rolling average percent leaking pumps;
 - iii. documentation of all inspections conducted under the requirements of section A.III.19.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions.
- 26.d** 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.
- 26.e** Records of all analyses required in sections A.III.17 and A.III.17.a through A.III.17.g and A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions. The records shall 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 A.III.17.f.iii and A.III.19.f.iii of these terms and conditions; and
 - iv. the beginning date and duration of performance trials of each candidate superior emission performing technology.
- 26.f** All records documenting the quality assurance program for valves or pumps as specified in sections A.III.17.g and A.III.19.g of these terms and conditions.
- 26.g** 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 sections A.III.17.g and A.III.19.g of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.h** Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) below:
- i. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) of this section.
- (a) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (b) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (c) 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.
- 26.i** 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 Sec. 63.160 of 40 CFR Part 63, Subpart H.

IV. Reporting Requirements

1. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit the reports listed in paragraphs (a) and (b) below:
 - (a) a 'Notification of Compliance Status' report described in section A.IV.2 of these terms and conditions; and
 - (b) periodic reports described in section A.IV.3 of these terms and conditions.
2. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit a Notification of Compliance Status by December 28, 1997. The notification shall provide the information listed below in paragraphs (a) through (d) for each process unit subject to the requirements of sections 63.163 through Sec. 63.174 of 40 CFR Part 63, Subpart H:
 - a. process unit identification;
 - b. number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service;
 - c. method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and
 - d. planned schedule for each phase of the requirements in sections A.III.3.a and A.III.8.b of these terms and conditions.

IV. Reporting Requirements (continued)

3. The permittee of a source subject to this subpart shall submit periodic reports on a semi-annual basis, covering the periods from January 1 through June 30 and July 1 through December 31 of each year. The report shall contain the information in paragraphs (a) and (b) below and shall be submitted semiannually starting 6 months after December 28, 1997. The first periodic report shall cover the first 6 months after December 28, 1997. Each subsequent periodic report shall cover the 6-month period following the preceding period.
 - a. For each process unit complying with the provisions of sections 63.163 through 63.174 of 40 CFR Part 63, Subpart H, the summary information listed in paragraphs (i) through (xv) below for each monitoring period during the 6-month period shall be submitted:
 - i. the number of valves for which leaks were detected as described in sections A.III.8 and A.III.8.a through A.III.8.b of these terms and conditions, the percent leakers, and the total number of valves monitored;
 - ii. the number of valves for which leaks were not repaired as required in sections A.III.8.h through A.III.8.k of these terms and conditions, identifying the number of those that are determined nonrepairable;
 - iii. the number of pumps for which leaks were detected as described in sections A.III.3 and A.III.3.a through A.III.3.b of these terms and conditions, the percent leakers, and the total number of pumps monitored;
 - iv. the number of pumps for which leaks were not repaired as required in sections A.III.3.c through A.III.3.e of these terms and conditions;
 - v. the number of compressors for which leaks were detected as described in section A.III.4.f of these terms and conditions;

IV. Reporting Requirements (continued)

- vi. the number of compressors for which leaks were not repaired as required in sections A.III.4.g through A.III.4.h of these terms and conditions;
 - vii. the number of agitators for which leaks were detected as described in sections A.III.13 and A.III.13.a through A.III.13.b of these terms and conditions;
 - viii. the number of agitators for which leaks were not repaired as required in section A.III.13.c of these terms and conditions;
 - ix. the number of connectors for which leaks were detected as described in sections A.III.14 and A.III.14.a through A.III.14.b of these terms and conditions, the percent of connectors leaking, and the total number of connectors monitored;
 - x. the number of connectors for which leaks were not repaired as required in section A.III.14.f of these terms and conditions, identifying the number of those that are determined nonreparable;
 - xi. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible;
 - xii. the results of all monitoring to show compliance with section 63.164(i) of 40 CFR Part 63, Subpart H, section A.III.5 of these terms and conditions, and section A.III.12.e of these terms and conditions conducted within the semiannual reporting period;
 - xiii. if applicable, the initiation of a monthly monitoring program under section A.III.8.d.i.(a) of these terms and conditions, or a quality improvement program under either sections A.III.16 or A.III.17 and A.III.17.a through A.III.17.g;
 - xiv. if applicable, notification of a change in connector monitoring alternatives as described in section A.III.14.d of these terms and conditions; and
 - xv. if applicable, the compliance option that has been selected under section A.III.12.k of these terms and conditions.
- b. The information listed in section A.IV.2 of these terms and conditions for the Notification of Compliance Status for process units with later compliance dates shall be submitted, in addition to any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

Starting February 2, 2000, the periodic reports shall be submitted as part of the periodic reports required by paragraph 63.506(e)(6) of 40 CFR Part 63, Subpart U.

V. Testing Requirements

- 1. Monitoring, as required under 40 CFR Part 63, Subpart H, shall comply with the following requirements:
 - 1.a Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

- 1.b** i. Except as provided for in paragraph (ii) below, 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 (i) above, 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 (i) above.
- 1.c** 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.
- 1.d** 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 (a) through (c) below. 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 A.V.1.b.i of these terms and conditions. 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, in 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 (iii) below.
- (c) For Phase III, a mixture of methane or other compounds, as applicable, in air, at a concentration of approximately, but less than, 10,000 parts per million methane for agitators, 5,000 parts per million for pumps in polymerizing monomer service, and 500 parts per million for all other equipment, except as provided in paragraph (iii) below.
- 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 permittee need not calibrate the scales that will not be used during that day's monitoring.
- 1.e** 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.

V. Testing Requirements (continued)

- 1.f** Monitoring data that do not meet the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions may be used to qualify for less frequent monitoring under the provisions in sections A.III.8.d.ii and A.III.8.d.iii of these terms and conditions or sections A.III.14.c.iii.(b) or A.III.14.c.iii.(c) of these terms and conditions provided the data meet the conditions specified in paragraphs (i) and (ii) below.
- i. The data were obtained before April 22, 1994.
 - ii. The departures from the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions or from the specified monitoring frequency of section A.III.8.c of these terms and conditions 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 section A.V.1.b of these terms and conditions, 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.
- 2.** When equipment is monitored for compliance as required in sections 63.164(i) of 40 CFR Part 63, Subpart H, A.III.15 of these terms and conditions, and A.III.12.i of these terms and conditions or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by 40 CFR Part 63, Subpart H, the permittee may elect to adjust or not to adjust the instrument readings for background. If a permittee elects to not adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in sections A.V.1.a through A.V.1.d of these terms and conditions. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If a permittee elects to adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in paragraphs (a) through (d) below.
- a. The requirements of sections A.V.1.a through A.V.1.d of these terms and conditions shall apply.
 - b. The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - c. 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.
 - d. 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.

V. Testing Requirements (continued)

3.
 - a. 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 a permittee 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.
 - b. A permittee may use good engineering judgment rather than the procedures in paragraph (a) above to determine that the percent organic HAP content does not exceed 5 percent by weight. When a permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (a) above shall be used to resolve the disagreement.
 - c. Conversely, the permittee 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.
 - d. If a permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (a) above, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.
 - e. Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.
4. When a flare is used to comply with section A.III.12.c of these terms and conditions, the compliance determination shall be conducted using Method 22 of 40 CFR Part 60, Appendix A to determine visible emissions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: AN - #63 (T044)

Activity Description: Acrylonitrile tank #63 - 12,000 gallon horizontal storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

- The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
12,000-gallon fixed roof storage tank - tank #63	OAC rule 3745-21-07(D)	See A.I.2.a below.
	40 CFR Part 63, Subpart U	See A.III below.

2. Additional Terms and Conditions

- No person shall place, store, or hold in any stationary storage vessel of more than five hundred gallons capacity any volatile photochemically reactive material unless such vessel is equipped with a permanent submerged fill pipe, is loaded through the use of a portable loading tube which can be inserted below the liquid level line during loading operations, or is a pressure tank as described in OAC rule 3745-21-07(D)(1) or is fitted with a vapor recovery system as described in OAC rule 3745-21-07(D)(1)(b).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

- Each piece of equipment in a process unit to which 40 CFR Part 63, Subpart H 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 2.** When each leak is detected as specified in sections A.III.3.a and A.III.4.f; sections A.III.8.b and A.III.9.a; and sections A.III.12.g, A.III.13.a, and A.III.14.b of these terms and conditions, the following requirements apply:
 - a. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - b. The identification on a valve may be removed after it has been monitored as specified in sections A.III.8.j and A.III.17.g.i.(d) of these terms and conditions, and no leak has been detected during the follow-up monitoring. If the permittee elects to comply using the provisions of section A.III.14.d.i of these terms and conditions, the identification on a connector may be removed after it is monitored as specified in section A.III.14.d.i of these terms and conditions and no leak is detected during that monitoring.
 - c. 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 A.III.14.d.i of these terms and conditions, may be removed after it has been repaired.
- 3.** The permittee shall monitor each pump in light liquid service monthly to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions and shall comply with the following requirements:
 - 3.a** The instrument reading for pumps in light liquid service, as determined by the method as specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, that defines a leak in each phase of the standard is:
 - i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 5,000 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 5,000 parts per million or greater for pumps handling polymerizing monomers and an instrument reading of 1,000 parts per million or greater for all other pumps.
 - 3.b** Each pump in light liquid service 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.
 - 3.c** 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 A.III.11 of these terms and conditions.
 - 3.d** A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - 3.e** For pumps in light liquid service, the first attempts at repair shall include, but are not limited to, the following practices where practicable:
 - i. tightening of packing gland nuts; and
 - ii. ensuring that the seal flush is operating at design pressure and temperature.
 - 3.f** The permittee 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 permittee has decided, all subsequent percent calculations shall be made on the same basis.

III. Monitoring and/or Record Keeping Requirements (continued)

- 3.g** If, in Phase III, calculated on a rolling, 6-month average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the permittee shall implement a quality improvement program for pumps that complies with the requirements of sections A.III.18, A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
- 3.h** 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.
- 3.i** 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 sections A.III.3 and A.III.3a of these terms and conditions;

PT = total pumps in organic HAP service, including those meeting the criteria in sections 63.163(e) and 63.163(f) of 40 CFR Part 63, Subpart H; and

PS = number of pumps leaking within 1 month of start-up during the current monitoring period.

- 4.** 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.
- 4.a** Each compressor seal system as required in section A.III.4 of these terms and condition shall be:
- i. operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. 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 sections A.III.12 and A.III.12.a through A.III.12.k; or
 - iii. equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- 4.b** The barrier fluid shall not be in light liquid service.
- 4.c** Each barrier fluid system as described in sections A.III.4, A.III.4.a, and A.III.4.b of these terms and conditions shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- 4.d** Each sensor as required in section A.III.4.c of these terms and conditions shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- 4.e** The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 4.f** If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under section A.III.4.e of these terms and conditions, a leak is detected.
- 4.g** 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 A.III.11 of these terms and conditions.
- 4.h** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

5. 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 below, as measured by the method specified in section A.V.2 of these terms and conditions.
 - a. 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 A.III.11 of these terms and conditions.
 - b. 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 A.V.2 of these terms and conditions.
6. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured. Each closed-purge, closed-loop, or closed-vent system shall:
 - a. return the purged process fluid directly to the process line; or
 - b. collect and recycle the purged process fluid to a process; or
 - c. be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of sections A.III.12 and A.III.12.a through A.III.12k; or
 - d. collect, store, and transport the purged process fluid to a system or facility identified below:
 - i. a waste management unit as defined in section 63.111 of 40 CFR Part 63, Subpart G, 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 (If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR Part 63, Subpart G, 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.); or
 - 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.
7. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - 7.a 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.
 - 7.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.
 - 7.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 sections A.III.7.a and A.III.7.b of these terms and conditions at all other times.
8. The permittee shall monitor all valves that are either in gas service or in light liquid service at the intervals specified in sections A.III.8.c and A.III.8.d of these terms and conditions and shall comply with the following requirements:
 - 8.a The valves shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.b** The instrument reading that defines a leak in a valve in each phase of the standard is:
- i. for Phase I beginning July 31, 1997 until July 30, 1998, an instrument reading of 10,000 parts per million or greater;
 - ii. for Phase II beginning July 31, 1998 until January 29, 2000, an instrument reading of 500 parts per million or greater; and
 - iii. for Phase III beginning January 30, 2000, an instrument reading of 500 parts per million or greater.
- 8.c** In Phases I and II, each valve shall be monitored quarterly.
- 8.d** In Phase III, the permittee shall monitor valves for leaks at the intervals specified below:
- i. At process units with 2 percent or greater leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, the permittee shall either:
 - (a) monitor each valve once per month; or
 - (b) within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and monitor quarterly.
 - ii. At process units with less than 2 percent leaking valves, the permittee shall monitor each valve once each quarter, except as provided in paragraphs (iii) and (iv) below.
 - iii. At process units with less than 1 percent leaking valves, the permittee may elect to monitor each valve once every 2 quarters.
 - iv. At process units with less than 0.5 percent leaking valves, the permittee may elect to monitor each valve once every 4 quarters.
- 8.e** 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 sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions;
- VL = number of valves found leaking, excluding nonrepairables as provided in section A.III.8.g of these terms and conditions;
- VT = total valves monitored in a monitoring period, excluding valves monitored as required by section A.III.8.j of these terms and conditions; and
- VC = optional credit for removed valves = $0.67 \times$ 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 $VC = 0$).
- 8.f** For use in determining monitoring frequency, as specified in section A.III.8.d of these terms and conditions, 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 8.g** 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 (ii) below. 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.
- 8.h** 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 A.III.11 of these terms and conditions.
- 8.i** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 8.j** 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 sections A.V.1 and A.V.1.a through A.V.1.f and section A.V.2, as appropriate, to determine whether the valve has resumed leaking.
- ii. Periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions may be used to satisfy the requirements of this section, if the timing of the monitoring period coincides with the time specified in this section. Alternatively, other monitoring may be performed to satisfy the requirements of this section, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this section.
- iii. If a leak is detected by monitoring that is conducted pursuant to this section, the permittee shall follow the provisions of paragraphs (a) and (b) below, to determine whether that valve must be counted as a leaking valve for purposes of sections A.III.8.e through A.III.8.g of these terms and conditions.
- (a) If the permittee elected to use periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions to satisfy the requirements of this section, then the valve shall be counted as a leaking valve.
- (b) If the permittee elected to use other monitoring, prior to the periodic monitoring required by sections A.III.8 and A.III.8.a through A.III.8.d of these terms and conditions, to satisfy the requirements 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.
- 8.k** First attempts at repair include, but are not limited to, the following 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.
- 9.** 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 by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions within 5 calendar days if evidence is found of a potential leak to the atmosphere by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in sections A.III.9.b and A.III.9.c of these terms and conditions, it is not necessary to monitor the system for leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 9.a** 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 or pumps subject to section A.III.3.a.iii.(c), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- 9.b**
- i. 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 A.III.11 of these terms and conditions.
 - ii. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - iii. For equipment identified in section A.III.9 of these terms and conditions that is not monitored by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions, 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.
- 9.c** First attempts at repair include, but are not limited to, the practices described under sections A.III.3.d through A.III.3.e and section A.III.8.k of these terms and conditions, for pumps and valves, respectively.
- 10.** No later than September 5, 1999, 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 40 CFR Part 63, Subpart H 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 sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions or shall comply with the requirements of sections 63.119(b) or (c) of 40 CFR Part 63, Subpart G.
- 11.**
- a. Delay of repair of equipment for which leaks have been detected is allowed if the repair 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:
 - i. the permittee 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
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sections A.III.12 and A.III.12.a through A.III.12.k of these terms and conditions.
 - d. Delay of repair for pumps is also allowed if:
 - i. repair requires replacing the existing seal design with a new system that the permittee has determined under the provisions of sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions will provide better performance: or
 - (a) a dual mechanical seal system that meets the requirements of section 63.163(e) of 40 CFR Part 63, Subpart H;
 - (b) a pump that meets the requirements of section 63.163(f) of 40 CFR Part 63, Subpart H; or
 - (c) a closed-vent system and control device that meets the requirements of section 63.163(g) of 40 CFR Part 63, Subpart H; and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

III. Monitoring and/or Record Keeping Requirements (continued)

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.

- 12.** Closed-vent systems and control devices used to comply with provisions of 40 CFR Part 63, Subpart H shall comply with the following:
- 12.a** 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 per 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 of 40 CFR Part 63, Subpart H.
- 12.b** 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 second at a minimum temperature of 760 degrees Celsius.
- 12.c** Flares used to comply with 40 CFR Part 63, Subpart H shall comply with the requirements of section 63.11(b) of 40 CFR Part 63, Subpart A.
- 12.d** Control devices that are used to comply with the provisions of 40 CFR Part 63, Subpart H shall be monitored to ensure that the control devices are operated and maintained in conformance with their design.
- 12.e** Each closed-vent system shall be inspected according to the procedures and schedule specified below:
- i. If the closed-vent system is constructed of hard-piping, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - ii. If the vapor collection system or closed-vent system is constructed of duct work, the permittee shall:
 - (a) conduct an initial inspection according to the procedures in section A.III.12.f of these terms and conditions; and
 - (b) conduct annual inspections according to the procedures in section A.III.12.f of these terms and conditions.
- 12.f** Each closed-vent system shall be inspected according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 12.g** 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 section A.III.12.h of these terms and conditions.
- i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - ii. Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in section A.III.12.h of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 12.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 permittee 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 completed by the end of the next process unit shutdown.
- 12.i** 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 permittee shall comply with either paragraph (i) or (ii) below, except as provided in paragraph (iii) below.
- i. 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 40 CFR Part 63, Subpart G. The flow indicator shall be installed at the entrance to any bypass line; or
- ii. 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.
- iii. 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.
- 12.j** Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of 40 CFR Part 63, Subpart H, such system or control device shall be operating.
- 12.k** The permittee of any control device subject to 40 CFR Part 63, Subpart H that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264, Subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR Part 265, Subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 63, Subpart H, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR Parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of 40 CFR Part 63, Subpart H. The permittee shall identify which option has been chosen, in the next periodic report required by section A.IV.3 of these terms and conditions.
- 13.** Each agitator in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 13.a** If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- 13.b** i. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
- ii. If there are indications of liquids dripping from the agitator, a leak is detected.
- 13.c** i. 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 A.III.11 of these terms and conditions.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 14.** The permittee shall monitor all connectors in gas/vapor and light liquid service at the intervals specified in section A.III.14.c of these terms and conditions.
- 14.a** The connectors shall be monitored to detect leaks by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions.
- 14.b** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.c The permittee shall monitor for leaks at the intervals specified in either paragraph (i) or (ii) and in paragraph (iii) below:

- i. For each group of existing process units within an existing source, by no later than January 31, 1998, the permittee shall monitor all connectors.
- ii. For new sources, within the first 12 months after initial start-up or January 31, 1998, whichever is later, the permittee shall monitor all connectors.
- iii. After conducting the initial survey required in paragraph (i) or (ii) above, the permittee shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (a) through (e) below, except as provided in section A.III.14.e of these terms and conditions:
 - (a) 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.
 - (b) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The permittee 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.
 - (c) If the permittee 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 permittee may monitor the connectors one time every 4 years. The permittee 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.
 - (d) If a process unit complying with the requirements 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 permittee shall increase the monitoring frequency to one time every 2 years. The permittee 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 permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.
 - (e) If a process unit complying with requirements of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the permittee shall increase the monitoring frequency to one time per year. The permittee may again elect to use the provisions of sections A.III.14.d through A.III.14.e of these terms and conditions when the percent leaking connectors decreases to less than 0.5 percent.

The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of section A.V.1.f of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.d** i. Except as provided in paragraph (ii) below, 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 section A.III.14.f of these terms and conditions, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of section A.III.14.g.ii of these terms and conditions.
- ii. As an alternative to the requirements in paragraph (i) above, a permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the permittee may not count nonrepairable connectors for the purposes of section A.III.14.g.ii of these terms and conditions. The permittee shall calculate the percent leaking connectors for the monitoring periods described in section A.III.14.c, by setting the nonrepairable component, CAN, in the equation in section A.III.14.g.ii to zero for all monitoring periods.
- iii. A permittee may switch alternatives described in paragraphs (i) and (ii) above at the end of the current monitoring period, provided that it is reported as required in sections A.IV.1 through A.IV.3 of these terms and conditions 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.
- 14.e** As an alternative to the requirements for sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) of these terms and conditions, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before September 5, 1996 may:
- i. comply with the requirements of section A.III.9 and A.III.9 .a through A.III.9.c of these terms and conditions; and
- ii. be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutant 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 section A.III.14.f of these terms and conditions.
- 14.f** 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 63.174(g) of 40 CFR Part 63, Subpart H and in section A.III.11 of these terms and conditions. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

III. Monitoring and/or Record Keeping Requirements (continued)

14.g For use in determining the monitoring frequency, as specified in section A.III.14.c, the percent leaking connectors shall be calculated as specified in paragraphs (i) and (ii) below:

(i) For the first monitoring period, use the following equation:

$$\% \text{ CL} = \text{CL}/(\text{Ct} + \text{CC}) \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

Ct = total number of monitored connectors in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

(ii) For subsequent monitoring periods, use the following equation:

$$\% \text{ CL} = [(\text{CL} - \text{CAN})/(\text{Ct} + \text{CC})] \times 100$$

where:

% CL = percent leaking connectors as determined through periodic monitoring required in sections A.III.14 and A.III.14.a through A.III.14.c of these terms and conditions;

CL = number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions;

CAN = number of allowable nonrepairable connectors, as determined by monitoring required in sections A.III.14.c.iii and A.III.14.c.iii.(a) through A.III.14.c.iii.(e) and sections A.III.14.d through A.III.14.e of these terms and conditions, not to exceed 2 percent of the total connector population, Ct;

Ct = total number of monitored connectors, including nonrepairables, in the process unit; and

CC = optional credit for removed connectors = $0.67 \times$ 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).

III. Monitoring and/or Record Keeping Requirements (continued)

- 14.h** Optional credit for removed connectors. If the permittee eliminates a connector subject to monitoring under section A.III.14.c of these terms and conditions, the permittee may receive credit for elimination of the connector, as described in section A.III.14.g of these terms and conditions, provided the requirements in paragraphs (i) through (iv) below are met.
- (i) The connector was welded after July 31, 1997.
 - (ii) The integrity of the weld is demonstrated by monitoring it according to the procedures in sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.
 - (iii) Welds created after June 12, 1995 to September 4, 1996 shall be monitored or tested by October 31, 1997.
 - (iv) Welds created after September 5, 1996 shall be monitored or tested within 3 months after being welded.
 - (v) 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 40 CFR Part 63, Subpart H.
- 15.**
- a. In Phase III, the permittee may elect to comply with one of the alternative quality improvement programs specified in sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. The decision to use one of these alternative provisions to comply with the requirements of section A.III.8.d.i.(b) of these terms and conditions must be made during the first year of Phase III for existing process units and for new process units.
 - b. The permittee of a process unit subject to the requirements of section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions 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 sections A.III.8.e through A.III.8.g of these terms and conditions.
 - c. After the process unit has fewer than 2 percent leaking valves, the permittee may elect to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, to continue to comply with the requirements in section A.III.16 or sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, or comply with both the requirements.
 - i. If the permittee elects to continue the quality improvement program, the permittee is exempt from the requirements for performance trials as specified in section A.III.17.f of these terms and conditions, or further progress as specified in section A.III.16.d of these terms and conditions, as long as the process unit has fewer than 2 percent leaking valves calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions.
 - ii. If the permittee elects to comply with both sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions and sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in sections A.III.8.d.ii, A.III.8.d.iii and A.III.8.d.iv of these terms and conditions.
 - iii. If the permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

16. A permittee who elects to use a quality improvement program to demonstrate further progress shall meet the following requirements:
- a. The permittee shall continue to comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except each valve shall be monitored quarterly.
 - b. The permittee shall collect the following data, and maintain records as required in section A.III.26.a of these terms and conditions, 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; and
 - iii. if a leak is detected, the repair methods used and the instrument readings after repair.
 - c. The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
 - d. The permittee must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of this section, except as provided in paragraphs (ii) and (iii) below.
 - 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:

$$\%LVR = (\%LVAVG1 - \%LVAVG2 / \%LVAVG1) \times 100$$

where:

$\%LVR$ = percent leaking valve reduction;

$\%LVAVG1 = (\%VLi + \%VLi+1)/2$; and

$\%LVAVG2 = (\%VLi+1 + \%VLi+2)/2$;

III. Monitoring and/or Record Keeping Requirements (continued)

where:

%V_{Li}, %V_{Li+1}, %V_{Li+2} are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

ii. A permittee 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 A.III.8.d.i.(a) of these terms and conditions using monthly monitoring or shall comply using a quality improvement program for technology review as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions. If the permittee elects to comply with the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions, the schedule for performance trials and valve replacements remains as specified in section A.III.17 of these terms and conditions.

iii. As an alternative to the provisions in paragraph (i) above, a permittee may use the procedure specified in paragraphs (a) and (b) below 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 = percent reduction required each quarter, as calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions; and

%VL = percent leaking valves, calculated according to sections A.III.8.e through A.III.8.g of these terms and conditions, at the time elected to use provisions of section A.III.8.d.i.(b) of these terms and conditions.

(b) The permittee shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in section A.III.16 of these terms and conditions.

- 17.** A permittee who elects to use a quality improvement program for technology review and improvement shall meet the following requirements:
- 17.a** The permittee shall comply with the requirements in sections A.III.8 and A.III.8.a through A.III.8.k of these terms and conditions except the requirement for monthly monitoring in A.III.8.d.i.(a) of these terms and conditions does not apply.
- 17.b** The permittee shall collect the data specified below, and maintain records as required in section A.III.26.b of these terms and conditions, 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; and
 - 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.c** The permittee shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- 17.d** The permittee 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.
- 17.e**
- i. The permittee shall analyze the data collected to comply with the requirements of section A.III.17.b of these terms and conditions 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 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 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 17.g** Each permittee 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 section A.III.17.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.17.f of these terms and conditions, 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 permittee of the process unit, by the vendor, or by a designated representative. The permittee 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 sections A.V.1 and A.V.1.a through A.V.1.f of these terms and conditions 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 permittee 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.
- 18.**
- a. In Phase III, if, on a rolling, 6-month 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 permittee shall comply with the requirements in sections A.III.19 and A.III.19.a through A.III.19.g of these terms and conditions.
 - b. The permittee 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 rolling, 6-month average, in the process unit (or plant site). Once the performance level is achieved, the permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.
 - 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 rolling, 6-month average, the permittee shall resume the quality improvement program starting at performance trials.

III. Monitoring and/or Record Keeping Requirements (continued)

d. 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 (ii) below.

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.

19. The quality improvement program for pumps shall include the following:

19.a The permittee shall comply with the requirements in sections A.III.3 and A.III.3.a through A.III.3.i of these terms and conditions.

19.b The permittee shall collect the following data, and maintain records as required in section A.III.26.c of these terms and conditions, 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; and

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.

19.c The permittee shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

19.d The permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.e** i. The permittee shall analyze the data collected to comply with the requirements of section A.III.19.b of these terms and conditions 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.f** 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 (v) below. 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 A.III.26.e.ii of these terms and conditions.
 - 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 permittee 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 permittee shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (vi) below. 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. A permittee 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 permittee 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.

III. Monitoring and/or Record Keeping Requirements (continued)

- 19.g** Each permittee 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 section A.III.19.e of these terms and conditions, if applicable, the findings of the trial evaluation required in section A.III.19.f of these terms and conditions, 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 permittee 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.
- 20.** If more than one process unit is subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the recordkeeping requirements for these process units in one recordkeeping 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.
- 21.** The permittee shall have recorded the following information pertaining to all equipment in each process unit subject to the requirements in sections A.III.1 through A.III.12 of these terms and conditions:
- 21.a** A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in section 63.174 of 40 CFR Part 63, Subpart H and instrumentation systems) subject to the requirements of 40 CFR Part 63, Subpart H. 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 A.III.14.c.i or A.III.14.c.ii of these terms and conditions.
 - 21.b** A schedule by process unit for monitoring connectors subject to section A.III.14 of these terms and conditions and valves subject to section A.III.8 of these terms and conditions.
 - 21.c** Equipment subject to the provisions of this subpart shall be identified on a plant site plan, in log entries, or by other appropriate methods. Physical tagging of the equipment to indicate that it is in organic HAP service is not required.

III. Monitoring and/or Record Keeping Requirements (continued)

- 21.d** A list of identification numbers for equipment that the permittee elects to equip with a closed-vent system and control device, under the provisions of section 63.163(g), 63.164(h), 63.165(c), or 63.173(f) of 40 CFR Part 63, Subpart H.
- 21.e** A list of identification numbers for compressors that the permittee 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 40 CFR Part 63, Subpart H.
- 21.f** Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the permittee elects to equip with a closed-vent system and control device, under the provisions of section A.III.10 of these terms and conditions.
- 21.g** A list of identification numbers for pressure relief devices subject to section A.III.5 of these terms and conditions.
- 21.h** A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of section 63.165(d) of 40 CFR Part 63, Subpart H.
- 21.i** Identification of instrumentation systems subject to the provisions of 40 CFR Part 63, Subpart H. Individual components in an instrumentation system need not be identified.
- 21.j** Identification of screwed connectors subject to the requirements of section A.III.14.e of these terms and conditions. Identification can be by area or grouping as long as the total number within each group or area is recorded.
- 21.k** 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 40 CFR Part 63, Subpart H and an explanation of the design criteria; and
 - ii. any changes to these criteria and the reasons for the changes.
- 21.l** The following information pertaining to all pumps subject to the provisions of section 63.163(j), valves subject to the provisions of sections 63.168(h) and (i) of 40 CFR Part 63, Subpart H, agitators subject to the provisions of sections 63.173(h) through (j), and connectors subject to the provisions of sections 63.174(f) and (g) of 40 CFR Part 63, Subpart H 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; and
 - 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.
- 21.m** A list of valves removed from and added to the process unit, as described in section A.III.8.e of these terms and conditions, if the net credits for removed valves is expected to be used.
- 21.n** A list of connectors removed from and added to the process unit, as described in section A.III.14.g.(i) of these terms and conditions, and documentation of the integrity of the weld for any removed connectors, as required in section 63.174(j) of 40 CFR Part 63, Subpart H. This is not required unless the net credits for removed connectors is expected to be used.
- 22.** For visual inspections of equipment subject to the provisions of this 40 CFR Part 63, Subpart H, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions for leaking equipment identified in this inspection. These records shall be retained for 2 years.

III. Monitoring and/or Record Keeping Requirements (continued)

- 23.** 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 40 CFR Part 63, Subpart H, the following information shall be recorded and kept for 2 years:
- 23.a** The instrument and the equipment identification number and the operator name, initials, or identification number.
 - 23.b** The date the leak was detected and the date of the first attempt to repair the leak.
 - 23.c** The date of successful repair of the leak.
 - 23.d** Maximum instrument reading measured by Method 21 of 40 CFR Part 60, Appendix A after it is successfully repaired or determined to be nonrepairable.
 - 23.e** "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 permittee 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) of 40 CFR Part 63, Subpart A, 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.
 - 23.f** Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - 23.g** 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 A.III.14.c of these terms and conditions, as described in section A.III.14.d of these terms and conditions, unless the permittee elects to comply with the provisions of section A.III.14.d.ii of these terms and conditions.
 - 23.h** The date and results of monitoring as required in sections A.III.14.d through A.III.14.e of these terms and conditions. If identification of connectors that have been opened or otherwise had the seal broken is made by location under section A.III.23.g of these terms and conditions, then all connectors within the designated location shall be monitored.
 - 23.i** Copies of the periodic reports as specified in section A.IV.3 of these terms and conditions, if records are not maintained on a computerized database capable of generating summary reports from the records.
- 24.** The dates and results of each compliance test required for compressors subject to the provisions in section 63.164(i) of 40 CFR Part 63, Subpart H and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in section A.III.5 of these terms and conditions. The results shall include:
- a. the background level measured during each compliance test; and
 - b. the maximum instrument reading measured at each piece of equipment during each compliance test.

III. Monitoring and/or Record Keeping Requirements (continued)

- 25.** The permittee shall maintain records of the information specified below for closed-vent systems and control devices. The records specified in paragraph (a) below shall be retained for the life of the equipment. The records specified in paragraphs (b) and (c) below shall be retained for 2 years.
- a. The design specifications and performance demonstrations specified below:
- 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 40 CFR Part 63; and
 - iv. a description of the parameter or parameters monitored, as required in section A.III.12.d of these terms and conditions, 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.
- b. Records of operation of closed-vent systems and control devices, as specified below:
- i. dates and durations when the closed-vent systems and control devices 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; and
 - iii. dates and durations of start-ups and shutdowns of control devices.
- c. Records of inspections of closed-vent systems as specified below:
- i. for each inspection conducted 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; and
 - ii. for each inspection conducted during which leaks were detected, the information specified in sections A.III.23 and A.III.23.a through A.III.23.i of these terms and conditions shall be recorded.
- 26.** Each permittee of a process unit subject to the requirements of sections A.III.16 and A.III.17 and A.III.17.a through A.III.17.h of these terms and conditions shall maintain the records specified in sections A.III.26.a through A.III.26.i of these terms and conditions for the period of the quality improvement program for the process unit.
- 26.a** For permittees who elect to use a reasonable further progress quality improvement program, as specified in section A.III.16 of these terms and conditions:
- i. all data required in section A.III.16.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter; and
 - iii. the beginning and ending dates while meeting the requirements of section A.III.16 of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.b** For permittees who elect to use a quality improvement program of technology review and improvement, as specified in sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions:
- i. all data required in section A.III.17.b of these terms and conditions;
 - ii. the percent leaking valves observed each quarter;
 - iii. documentation of all inspections conducted under the requirements of section A.III.17.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.17 and A.III.17.a through A.III.17.g of these terms and conditions.
- 26.c** For permittees subject to the requirements of the pump quality improvement program as specified in sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions:
- i. all data required in section A.III.19.b of these terms and conditions;
 - ii. the rolling average percent leaking pumps;
 - iii. documentation of all inspections conducted under the requirements of section A.III.19.d of these terms and conditions, and any recommendations for design or specification changes to reduce leak frequency; and
 - iv. the beginning and ending dates while meeting the requirements of sections A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions.
- 26.d** 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.
- 26.e** Records of all analyses required in sections A.III.17 and A.III.17.a through A.III.17.g and A.III.18, A.III.19, and A.III.19.a through A.III.19.g of these terms and conditions. The records shall 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 A.III.17.f.iii and A.III.19.f.iii of these terms and conditions; and
 - iv. the beginning date and duration of performance trials of each candidate superior emission performing technology.
- 26.f** All records documenting the quality assurance program for valves or pumps as specified in sections A.III.17.g and A.III.19.g of these terms and conditions.
- 26.g** 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 sections A.III.17.g and A.III.19.g of these terms and conditions.

III. Monitoring and/or Record Keeping Requirements (continued)

- 26.h** Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) below:
- i. The permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph (a) or (b) of this section, as provided in paragraph (c) of this section.
- (a) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (b) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (c) 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.
- 26.i** 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 Sec. 63.160 of 40 CFR Part 63, Subpart H.

IV. Reporting Requirements

1. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit the reports listed in paragraphs (a) and (b) below:
 - (a) a 'Notification of Compliance Status' report described in section A.IV.2 of these terms and conditions; and
 - (b) periodic reports described in section A.IV.3 of these terms and conditions.
2. Each permittee of a source subject to 40 CFR Part 63, Subpart H shall submit a Notification of Compliance Status by December 28, 1997. The notification shall provide the information listed below in paragraphs (a) through (d) for each process unit subject to the requirements of sections 63.163 through Sec. 63.174 of 40 CFR Part 63, Subpart H:
 - a. process unit identification;
 - b. number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service;
 - c. method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and
 - d. planned schedule for each phase of the requirements in sections A.III.3.a and A.III.8.b of these terms and conditions.

IV. Reporting Requirements (continued)

3. The permittee of a source subject to this subpart shall submit periodic reports on a semi-annual basis, covering the periods from January 1 through June 30 and July 1 through December 31 of each year. The report shall contain the information in paragraphs (a) and (b) below and shall be submitted semiannually starting 6 months after December 28, 1997. The first periodic report shall cover the first 6 months after December 28, 1997. Each subsequent periodic report shall cover the 6-month period following the preceding period.
- a. For each process unit complying with the provisions of sections 63.163 through 63.174 of 40 CFR Part 63, Subpart H, the summary information listed in paragraphs (i) through (xv) below for each monitoring period during the 6-month period shall be submitted:
- i. the number of valves for which leaks were detected as described in sections A.III.8 and A.III.8.a through A.III.8.b of these terms and conditions, the percent leakers, and the total number of valves monitored;
 - ii. the number of valves for which leaks were not repaired as required in sections A.III.8.h through A.III.8.k of these terms and conditions, identifying the number of those that are determined nonrepairable;
 - iii. the number of pumps for which leaks were detected as described in sections A.III.3 and A.III.3.a through A.III.3.b of these terms and conditions, the percent leakers, and the total number of pumps monitored;
 - iv. the number of pumps for which leaks were not repaired as required in sections A.III.3.c through A.III.3.e of these terms and conditions;
 - v. the number of compressors for which leaks were detected as described in section A.III.4.f of these terms and conditions;

IV. Reporting Requirements (continued)

- vi. the number of compressors for which leaks were not repaired as required in sections A.III.4.g through A.III.4.h of these terms and conditions;
 - vii. the number of agitators for which leaks were detected as described in sections A.III.13 and A.III.13.a through A.III.13.b of these terms and conditions;
 - viii. the number of agitators for which leaks were not repaired as required in section A.III.13.c of these terms and conditions;
 - ix. the number of connectors for which leaks were detected as described in sections A.III.14 and A.III.14.a through A.III.14.b of these terms and conditions, the percent of connectors leaking, and the total number of connectors monitored;
 - x. the number of connectors for which leaks were not repaired as required in section A.III.14.f of these terms and conditions, identifying the number of those that are determined nonreparable;
 - xi. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible;
 - xii. the results of all monitoring to show compliance with section 63.164(i) of 40 CFR Part 63, Subpart H, section A.III.5 of these terms and conditions, and section A.III.12.e of these terms and conditions conducted within the semiannual reporting period;
 - xiii. if applicable, the initiation of a monthly monitoring program under section A.III.8.d.i.(a) of these terms and conditions, or a quality improvement program under either sections A.III.16 or A.III.17 and A.III.17.a through A.III.17.g;
 - xiv. if applicable, notification of a change in connector monitoring alternatives as described in section A.III.14.d of these terms and conditions; and
 - xv. if applicable, the compliance option that has been selected under section A.III.12.k of these terms and conditions.
- b. The information listed in section A.IV.2 of these terms and conditions for the Notification of Compliance Status for process units with later compliance dates shall be submitted, in addition to any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

Starting February 2, 2000, the periodic reports shall be submitted as part of the periodic reports required by paragraph 63.506(e)(6) of 40 CFR Part 63, Subpart U.

V. Testing Requirements

- 1. Monitoring, as required under 40 CFR Part 63, Subpart H, shall comply with the following requirements:
 - 1.a Monitoring shall comply with Method 21 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

- 1.b** i. Except as provided for in paragraph (ii) below, 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 (i) above, 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 (i) above.
- 1.c** 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.
- 1.d** 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 (a) through (c) below. 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 A.V.1.b.i of these terms and conditions. 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, in 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 (iii) below.
- (c) For Phase III, a mixture of methane or other compounds, as applicable, in air, at a concentration of approximately, but less than, 10,000 parts per million methane for agitators, 5,000 parts per million for pumps in polymerizing monomer service, and 500 parts per million for all other equipment, except as provided in paragraph (iii) below.
- 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 permittee need not calibrate the scales that will not be used during that day's monitoring.
- 1.e** 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.

V. Testing Requirements (continued)

- 1.f Monitoring data that do not meet the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions may be used to qualify for less frequent monitoring under the provisions in sections A.III.8.d.ii and A.III.8.d.iii of these terms and conditions or sections A.III.14.c.iii.(b) or A.III.14.c.iii.(c) of these terms and conditions provided the data meet the conditions specified in paragraphs (i) and (ii) below.
- i. The data were obtained before April 22, 1994.
 - ii. The departures from the criteria specified in sections A.V.1.a through A.V.1.e of these terms and conditions or from the specified monitoring frequency of section A.III.8.c of these terms and conditions 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 section A.V.1.b of these terms and conditions, 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.
2. When equipment is monitored for compliance as required in sections 63.164(i) of 40 CFR Part 63, Subpart H, A.III.15 of these terms and conditions, and A.III.12.i of these terms and conditions or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by 40 CFR Part 63, Subpart H, the permittee may elect to adjust or not to adjust the instrument readings for background. If a permittee elects to not adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in sections A.V.1.a through A.V.1.d of these terms and conditions. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If a permittee elects to adjust instrument readings for background, the permittee shall monitor the equipment according to the procedures specified in paragraphs (a) through (d) below.
- a. The requirements of sections A.V.1.a through A.V.1.d of these terms and conditions shall apply.
 - b. The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - c. 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.
 - d. 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.

V. Testing Requirements (continued)

3.
 - a. 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 a permittee 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.
 - b. A permittee may use good engineering judgment rather than the procedures in paragraph (a) above to determine that the percent organic HAP content does not exceed 5 percent by weight. When a permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (a) above shall be used to resolve the disagreement.
 - c. Conversely, the permittee 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.
 - d. If a permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (a) above, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.
 - e. Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.
4. When a flare is used to comply with section A.III.12.c of these terms and conditions, the compliance determination shall be conducted using Method 22 of 40 CFR Part 60, Appendix A to determine visible emissions.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK1 (T070)

Activity Description: Recovered Acetone -26,844 gallon horizontal cylindrical storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
26,844-gal. horizontal cylindrical storage tank	OAC rule 3745-31-05 (PTI 16-1200)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.c below.

2. Additional Terms and Conditions

- 2.a Acetone storage tank N25 shall be designed, equipped and/or operated as follows:
 - i. The tank shall be designed for full vacuum and be equipped with an emergency pressure relief device rated for 15 psig.
 - ii. A nitrogen blanketing system shall be employed to maintain working pressures during normal operating conditions.
 - iii. A vapor return line shall transfer displaced vapors back to the delivery vessel. There shall be no leaks in the delivery vessel pressure/vacuum relief valves and hatch cover, and vapor/liquid lines during the transfer of material.
 - iv. A vapor balance line shall equalize pressure between acetone storage tanks during material transfers.
- 2.b The permittee shall employ a permanent submerged fill pipe.
- 2.c The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK4 (T071)

Activity Description: Recovered Aniline - 26,844 gallon horizontal cylindrical storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
26,844-gal. horizontal cylindrical storage tank	OAC rule 3745-31-05 (PTI 16-1200)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.c below.
	40 CFR Part 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The aniline storage tank shall be designed, equipped, and/or operated as follows:
 - i. The tank shall be designed for full vacuum and be equipped with an emergency pressure relief device rated for 15 psig.
 - ii. A vapor return line shall transfer displaced vapors back to the delivery vessel. There shall be no leaks in the delivery vessel pressure/vacuum relief valves and hatch cover, and vapor/liquid lines during the transfer of material.
 - iii. A scrubber shall be employed to control process transfer working losses. The scrubber shall be designed for a 90% control efficiency.
- 2.b The permittee shall employ a permanent submerged fill pipe.
- 2.c The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK9T7 (T077)

Activity Description: Triisobutylene - 13,532 gallon vertical cylindrical storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
13,532-gal. vertical cylindrical storage tank	OAC rule 3745-31-05 (PTI 16-1271)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.c below.
	40 CFR Part 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The storage tank shall be designed, equipped, and/or operated with a vapor balance system.
- 2.b The permittee shall employ a permanent submerged fill pipe.
- 2.c The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

V. Testing Requirements (continued)

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK8T6 (T079)

Activity Description: Styrene - 14,380 gallon vertical cylindrical storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
14,380-gal. vertical cylindrical storage tank	OAC rule 3745-31-05 (PTI 16-1271)	0.02 tpy of volatile organic compounds (VOC) See A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.c below.
	40 CFR Part 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The storage tank shall be designed, equipped, and/or operated with a vent scrubber to control process transfer working losses.
- 2.b The permittee shall employ a permanent submerged fill pipe.
- 2.c The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

V. Testing Requirements (continued)

1.a Emission Limitation:

0.02 tpy of VOC

Applicable Compliance Method:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK23 (T080)

Activity Description: Vanlube 9221 - 12,142 gallon vertical cylindrical storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
12,142-gal. fixed roof storage tank	OAC rule 3745-31-05 (PTI 16 -1336)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.b below.
	40 CFR Part 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The permittee shall employ a permanent submerged fill pipe.
- 2.b The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

V. Testing Requirements (continued)

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK16T12 (T082)
Activity Description: DPA - 28,000 gallon horizontal storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
28,000-gal. fixed roof storage tank	OAC rule 3745-31-05 (PTI 16-1365)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.b below.
	40 CFR 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The permittee shall employ a permanent submerged fill pipe.
- 2.b The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

V. Testing Requirements (continued)

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK12T10 (T083)

Activity Description: Recovered P-Trimer - 14,300 gallon vertical cylindrical storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
14,300-gal. fixed roof storage tank	OAC rule 3745-31-05 (PTI 16-1365)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.c below.
	40 CFR 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The storage tank shall be designed, equipped, and/or operated with a vapor balance system.
- 2.b The permittee shall employ a permanent submerged fill pipe.
- 2.c The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

V. Testing Requirements (continued)

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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: TK15T11 (T084)

Activity Description: Diisobutylene - 28,000 gallon horizontal storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
28,000-gal. fixed roof storage tank	OAC rule 3745-31-05 (PTI 16-1365)	0.01 tpy of volatile organic compounds (VOC) See A.I.2.a and A.I.2.b below.
	OAC rule 3745-21-07(D)(2)	See A.I.2.c below.
	40 CFR 60, Subpart Kb	See A.III.1 below.

2. Additional Terms and Conditions

- 2.a The storage tank shall be designed, equipped, and/or operated with a vapor balance system.
- 2.b The permittee shall employ a permanent submerged fill pipe.
- 2.c The emissions limit based on this applicable rule is equivalent to or less stringent than the limit established pursuant to OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the emissions unit.

IV. Reporting Requirements

1. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

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:

V. Testing Requirements (continued)

1.a Emission Limitation:

0.01 tpy of VOC

Applicable Compliance Method:

USEPA's "Tanks Program 4.0" or the most current version of this program

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), 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 (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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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

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