



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
RICHLAND COUNTY**

CERTIFIED MAIL

Street Address:

50 West Town Street, Suite 700

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 03-17351

Fac ID: 0370010311

DATE: 8/28/2007

Arlington Energy
Jeff Schultheis
PO Box 285B 1237 West 4th Street
Mansfield, OH 44906

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

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

Sincerely,

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

CC: USEPA

NWDO



**Permit To Install
Terms and Conditions**

**Issue Date: 8/28/2007
Effective Date: 8/28/2007**

FINAL PERMIT TO INSTALL 03-17351

Application Number: 03-17351
Facility ID: 0370010311
Permit Fee: **\$200**
Name of Facility: Arlington Energy
Person to Contact: Jeff Schultheis
Address: PO Box 285B 1237 West 4th Street
Mansfield, OH 44906

Location of proposed air contaminant source(s) [emissions unit(s)]:
**1237 W. 4th Street
Mansfield, Ohio**

Description of proposed emissions unit(s):
Fugitive VOC emissions from equipment leaks.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski
Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting 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 (i.e., postmarked) quarterly 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

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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. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

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The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

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13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. 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. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant
VOC

Tons Per Year
Negligible

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(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 specified in narrative form following the table.

Operations, Property, and/or Equipment - (P801) - fugitive VOC emissions from equipment leaks

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
ORC 3704.03(T)(4)	See A.2.a The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-09(DD) and 40 CFR Part 60, Subpart VV.
OAC rule 3745-21-09(DD)	See sections A.2.f and F.9
40 CFR Part 60, Subpart VV	See sections below with references to 40 CFR Part 60

2. Additional Terms and Conditions

- 2.a The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the volatile organic compound (VOC) emissions from this air contaminant source since the uncontrolled potential to emit for VOC emissions is less than ten tons per year.
- 2.b Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of 40 CFR sections 60.482-1 through 60.482-10 or 60.480(e) for all equipment within 180 days of initial startup. [40 CFR 60.482-1(a)]
- 2.c Compliance with 40 CFR sections 60.482-1 to 60.482-10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in 40 CFR 60.485. [40 CFR 60.482-1(b)]
- 2.d An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of 40 CFR sections 60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, and 60.482-10 as provided in 40 CFR

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60.484. [40 CFR 60.482-1(c)(1)]

If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of 40 CFR sections 60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, or 60.482-10, an owner or operator shall comply with the requirements of that determination. [40 CFR 60.482-1(c)(2)]

- 2.e** Equipment that is in vacuum service is excluded from the requirements of 40 CFR sections 60.482-2 to 60.482-10 if it is identified as required in 40 CFR 60.486(e)(5). [40 CFR 60.482-1(d)]
- 2.f** The permittee shall employ best available control measures for the emissions unit for the purpose of ensuring compliance with the above-mentioned applicable requirements. The permittee has committed to implementing a Leak Detection and Repair (LDAR) program to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other equally-effective control measures to ensure compliance.

The permittee shall include the appropriate process equipment and regulated components in the LDAR program. The LDAR program shall comply with the appropriate provisions (including operational restrictions, monitoring and Record keeping, reporting, and testing) of OAC rule 3745-21-09(DD) (Leaks from Process Units that Produce Organic Chemicals) and 40 CFR Part 60, Subpart VV (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry). In the case of overlapping provisions, the permittee shall comply with the more stringent requirement.

- 2.g** Owners or operators may choose to comply with the provisions of 40 CFR Part 65, Subpart F, to satisfy the requirements of 40 CFR sections 60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR Part 65, Subpart F, the requirements of 40 CFR sections 60.485(d), (e) and (f) and 40 CFR sections 60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR Part 65 are provided in 40 CFR 65.1. [40 CFR 60.480(e)]

B. Operational Restrictions

1. Pumps in light liquid service:

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- a. Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and paragraphs B.1.g, B.1.h, and B.1.i of this permit. [40 CFR 60.482-2(a)(1)]
- 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. [40 CFR 60.482-2(a)(2)]
- c. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-2(b)(1)]
- d. If there are indications of liquids dripping from the pump seal, a leak is detected. [40 CFR 60.482-2(b)(2)]
- e. 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 40 CFR 60.482-9. [40 CFR 60.482-2(c)(1)]
- f. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(c)(2)]
- g. Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs of B.1.a and B.1.b of this permit, *Provided* the following requirements are met:
 - i. Each dual mechanical seal system is --
 - (a) operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
 - (b) equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or
 - (c) equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
 - ii. The barrier fluid system is in heavy liquid service or is not in VOC service.

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- iii. Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- iv. Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
- v. Each sensor, as described in paragraph (B)(1)(g)(iii) above, is checked daily or is equipped with an audible alarm, and the owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- vi. If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (B)(1)(g)(v), a leak is detected.
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 40 CFR 60.482-9.

A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

[40 CFR 60.482-2(d)]

- h. Any pump that is designated, as described in paragraph (B)(1)(h)(i) and (ii) below, for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (B)(1)(a), (b), (e), (f) and (g) above, if the pump:
 - i. has no externally actuated shaft penetrating the pump housing,
 - ii. is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in 40 CFR 60.485(c)), and
 - iii. is tested for compliance with paragraph (B)(1)(h)(ii) above initially upon designation, annually, and at other times requested by the Administrator.

[40 CFR 60.482-2(e)]

- i. If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from paragraphs (B)(1)(a) through (B)(1)(h) above. [60.482-2(f)]
- j. Any pump that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (B)(1)(a) and (B)(1)(g)(iv) through (vi) of this permit if:
 - a. the owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (B)(1)(a) and (b) above; and
 - b. the owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraphs (B)(1)(e) and (f) above if a leak is detected.

[40 CFR 60.482-2(g)]

- k. Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (B)(1)(b) and (B)(1)(g)(iv) above, and the daily requirements of paragraph (B)(1)(g)(v) above, provided that each pump is visually inspected as often as practicable and at least monthly. [40 CFR 60.482-2(h)]
2. Pressure relief devices in gas/vapor service:
- a. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(a)]
 - b. After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of

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less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-4(b)(1)]

- c. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c).
[40 CFR 60.482-4(b)(2)]
 - d. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of paragraphs (a) and (b) of this section.
[40 CFR 60.482-4(c)]
 - e. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (B)(3)(a) and (B)(3)(b) above, provided the owner or operator complies with the requirements in paragraph (B)(3)(f) below.
[40 CFR 60.482-4(d)]
 - f. After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 60.482-9.
3. Valves in gas/vapor service and in light liquid service:
- a. Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), 40 CFR sections 60.483-1, 2 and 60.482-1(c).
 - b. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-7(b)]
 - c. Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until

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- a leak is detected. [40 CFR 60.482-7(c)(1)]
- d. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [40 CFR 60.482-7(c)(2)]
 - e. 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 40 CFR 60.482-9. [40 CFR 60.482-7(d)(1)]
 - f. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-7(d)(2)]
 - g. First attempts at repair include, but are not limited to, the following best practices where practicable:
 - i. tightening of bonnet bolts;
 - ii. replacement of bonnet bolts;
 - iii. tightening of packing gland nuts;
 - iv. injection of lubricant into lubricated packing. [40 CFR 60.482-7(e)]
 - h. Any valve that is designated, as described in 40 CFR 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:
 - i. has no external actuating mechanism in contact with the process fluid,
 - ii. is operated with emissions less than 500 ppm above background as determined by the method specified in 40 CFR 60.485(c), and
 - iii. is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator. [40 CFR 60.482-7(f)]
 - i. Any valve that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

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- i. the owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and
 - ii. the owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [40 CFR 60.482-7(g)]
 - j. Any valve that is designated, as described in 40 CFR 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:
 - i. the owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.
 - ii. the process unit within which the valve is located either becomes an affected facility through 40 CFR sections 60.14 or 60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and
 - iii. the owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 60.482-7(h)]
- 4. Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors:
 - a. If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:
 - i. the owner or operator shall monitor the equipment within 5 days by the method specified in 40 CFR 60.485(b) and shall comply with the requirements of paragraphs B.7.b through B.7.e. below; or
 - ii. the owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak. [40 CFR 60.482-8(a)]
 - b. If an instrument reading of 10,000 ppm or greater is measured, a leak is

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detected. [40 CFR 60.482-8(b)]

- 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 40 CFR 60.482-9. [40 CFR 60.482-8(c)(1)]
 - d. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-8(c)(2)]
 - e. First attempts at repair include, but are not limited to, the best practices described in paragraph B.6.g above. [40 CFR 60.482-8(d)]
5. Delay of repair:
- a. Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. [40 CFR 60.482-9(a)]
 - b. Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service. [40 CFR 60.482-9(b)]
 - c. Delay of repair for valves will be allowed if:
 - i. the owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
 - ii. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10. [40 CFR 60.482-9(c)]
 - d. Delay of repair for pumps will be allowed if:
 - i. repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
 - ii. repair is completed as soon as practicable, but not later than 6 months after the leak was detected. [40 CFR 60.482-9(d)]
 - e. Delay of repair beyond a process unit shutdown will be allowed for a valve, if

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valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]

6. Alternative standards for valves -- allowable percentage of valves leaking:
- a. An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent. [40 CFR 60.483-1(a)]
 - b. The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:
 - i. an owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in 40 CFR 60.487(d);
 - ii. a performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator;
 - iii. if a valve leak is detected, it shall be repaired in accordance with 40 CFR sections 60.482-7(d) and (e). [40 CFR 60.483-1(b)]
 - c. Performance tests shall be conducted in the following manner:
 - i. all valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in 40 CFR 60.485(b);
 - ii. if an instrument reading of 10,000 ppm or greater is measured, a leak is detected;
 - iii. the leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility. [40 CFR 60.483-1(c)]

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- d. Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent. [40 CFR 60.483-1(d)]
7. Alternative standards for valves -- skip period leak detection and repair:
- a. An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section. [40 CFR 60.483-2(a)]
 - b. An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in 40 CFR 60.487(d). [40 CFR 60.483-2(a)]
 - c. An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in 40 CFR 60.482-7. [40 CFR 60.483-2(b)]
 - d. After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)]
 - e. After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)]
 - f. If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in 40 CFR 60.482-7 but can again elect to use this section. [40 CFR 60.483-2(b)]
 - g. The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section. [60.483-2(b)]
 - h. An owner or operator must keep a record of the percent of valves found leaking during each leak detection period. [40 CFR 60.483-2(b)]

C. Monitoring and/or Recordkeeping Requirements

1. Each owner or operator subject to the provisions of this subpart shall comply with the Record keeping requirements of this section. [40 CFR 60.486(a)]
2. An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the Record keeping requirements for these facilities in one Record keeping system if the system identifies each record by each facility. [40 CFR 60.486(a)]
3. When each leak is detected as specified in 40 CFR sections 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, 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 for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months.
 - c. The identification on equipment, except on a valve, may be removed after it has been repaired. [40 CFR 60.486(b)]
4. When each leak is detected as specified in 40 CFR sections 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:
 - a. The instrument and operator identification numbers and the equipment identification number.
 - b. The date the leak was detected and the dates of each attempt to repair the leak.
 - c. Repair methods applied in each attempt to repair the leak.
 - d. "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.
 - e. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

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- f. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
 - g. The expected date of successful repair of the leak if a leak is not repaired within 15 days.
 - h. Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - i. The date of successful repair of the leak. [40 CFR 60.486(c)]
5. The following information pertaining to all equipment subject to the requirements in 40 CFR sections 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location:
- a. A list of identification numbers for equipment subject to the requirements of this subpart.
 - b. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR sections 60.482-2(e), 60.482-3(l) and 60.482-7(f).
 - c. The designation of equipment as subject to the requirements of 40 CFR sections 60.482-2(e), 60.482-3(l), or 60.482-7(f) shall be signed by the owner or operator.
 - d. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR 60.482-4.
 - e. The dates of each compliance test as required in 40 CFR sections 60.482-2(e), 60.482-3(l), 60.482-4, and 60.482-7(f).
 - f. The background level measured during each compliance test.
 - g. The maximum instrument reading measured at the equipment during each compliance test.
 - h. A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)]
6. The following information pertaining to all valves subject to the requirements of 40 CFR sections 60.482-7(g) and (h) and to all pumps subject to the requirements of 40 CFR 60.482-2(g) shall be recorded in a log that is kept in a readily accessible location:

- a. A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.
 - b. A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve. [40 CFR 60.486(f)]
7. The following information shall be recorded for valves complying with 40 CFR 60.483-2:
 - a. A schedule of monitoring.
 - b. The percent of valves found leaking during each monitoring period. [40 CFR 60.486(g)]
8. The following information shall be recorded in a log that is kept in a readily accessible location:
 - a. Design criterion required in 40 CFR sections 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and
 - b. Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)]
9. The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in 40 CFR 60.480(d):
 - a. An analysis demonstrating the design capacity of the affected facility,
 - b. A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and
 - c. An analysis demonstrating that equipment is not in VOC service. [40 CFR 60.486(l)]
10. Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)]

11. The provisions of 40 CFR sections 60.7(b) and (d) do not apply to affected facilities subject to this subpart. [40 CFR 60.486(k)]

D. Reporting Requirements

1. Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date. [40 CFR 60.487(a)]
2. The initial semiannual report to the Administrator shall include the following information:
 - a. Process unit identification.
 - b. Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f).
 - c. Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f).
 - d. Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR 60.482-3(l) and those compressors complying with 40 CFR 60.482-3(h). [40 CFR 60.487(b)]
3. All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR 60.486:
 - a. Process unit identification.
 - b. For each month during the semiannual reporting period,
 - i. number of valves for which leaks were detected as described in 40 CFR sections 60.482(7)(b) or 60.483-2;
 - ii. number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1);
 - iii. number of pumps for which leaks were detected as described in 40 CFR

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- sections 60.482-2(b) and (d)(6)(i);
- iv. number of pumps for which leaks were not repaired as required in 40 CFR sections 60.482-2(c)(1) and (d)(6)(ii);
 - v. number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f);
 - vi. number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1); and
 - vii. the facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.
- c. Dates of process unit shutdowns which occurred within the semiannual reporting period.
 - d. Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report. [40 CFR 60.487(c)]
4. An owner or operator electing to comply with the provisions of 40 CFR sections 60.483-1 or 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions. [40 CFR 60.487(d)]
 5. An owner or operator shall report the results of all performance tests in accordance with 40 CFR 60.8 of the General Provisions. The provisions of 40 CFR 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests. [40 CFR 60.487(e)]
 6. The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State. [40 CFR 60.487(f)]

E. Testing Requirements

1. In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b). [40 CFR 60.485(a)]
2. The owner or operator shall determine compliance with the standards in 40 CFR sections 60.482, 60.483, and 60.484 as follows:
 - a. Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:
 - i. zero air (less than 10 ppm of hydrocarbon in air); and
 - ii. a mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)]
3. The owner or operator shall determine compliance with the no detectable emission standards in 40 CFR sections 60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows:
 - a. The requirements of paragraph (b) shall apply.
 - b. Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)]
4. The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:
 - a. Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference -- see 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.
 - b. Organic compounds that are considered by the Administrator to have negligible

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photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

- c. Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs 4(a) and (b) of this section shall be used to resolve the disagreement. [40 CFR 60.485(d)]
5. The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:
 - a. The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference -- see 60.17) shall be used to determine the vapor pressures.
 - b. The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F) is equal to or greater than 20 percent by weight.
 - c. The fluid is a liquid at operating conditions. [40 CFR 60.485(e)]
 6. Samples used in conjunction with paragraphs (d), (e), and (g) of 40 CFR 60.485 shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)]
 7. The owner or operator shall determine compliance with the standards of flares as follows:
 - a. Method 22 shall be used to determine visible emissions.
 - b. A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.
 - c. The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{\max} = K_1 + K_2 H_T$$

Where:

V_{\max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf)

K_1 = 8.706 m/sec (metric units) or 28.56 ft/sec (English units)

K_2 = 0.7084 m⁴/MJ-sec (metric units) or 0.087 ft⁴/Btu-sec (English units)

- d. The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

K = Conversion constant, 1.740×10^7 (g-mole)(MJ)/(ppm-scm-kcal) (metric units) or 4.674×10^8 [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component "i," ppm

H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

- e. Method 18 and ASTM D2504-67, 77, or 88 (Re-approved 1993) (incorporated by reference -- see 60.17) shall be used to determine the concentration of sample component "i."
- f. ASTM D2382-76 or 88 or D4809-95 (incorporated by reference -- see 40 CFR 60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.
- g. Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used. [40 CFR 60.485(g)]

F. Miscellaneous Requirements

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1. Equivalence of means of emission limitation:
 - a. Each owner or operator subject to the provisions of Subpart VV may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.
[40 CFR 60.484(a)]
 - b. Determination of equivalence to the equipment, design, and operational requirements of Subpart VV will be evaluated by the following guidelines:
 - i. each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation;
 - ii. the Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements;
 - iii. the Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements. [40 CFR 60.484(b)]
 - c. Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:
 - i. each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation;
 - ii. for each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated;
 - iii. for each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated;

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- iv. each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice;
- v. the Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4);
- vi. the Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice. [40 CFR 60.484(c)]
- d. An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation. [40 CFR 60.484(d)]
- e. After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved. [40 CFR 60.484(e)(1)]
- f. After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register. [40 CFR 60.484(e)(2)]
- g. Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)a. of the Clean Air Act. [40 CFR 60.484(e)(3)]
- h. Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart. [40 CFR 60.484(f)(1)]
- i. The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

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2. Reconstruction:
 - a. For the purposes of this subpart:
 - i. the cost of the following frequently replaced components of the facility shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable new facility" under 40 CFR 60.15: pump seals, nuts and bolts, rupture disks, and packings;
 - ii. under 40 CFR 60.15, the "fixed capital cost of new components" includes the fixed capital cost of all depreciable components (except components specified in 40 CFR 60.488 (a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the "Applicability and designation of affected facility" section of the appropriate subpart.) For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement. [40 CFR 60.488]
3. Within 180 days of the start up of this emissions unit, the permittee shall develop a facility LDAR program. At a minimum, the program shall include all the appropriate process equipment and regulated components that are subject to this program and clearly identify how the permittee will comply with the appropriate provisions (including operational restrictions, monitoring and Record keeping, reporting, and testing) of OAC rule 3745-21-09(DD) and 40 CFR Part 60, Subpart VV.
4. The permittee shall submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. This report shall be submitted by January 31 of each year. This requirement may be satisfied, if required, by including and identifying the specific emissions data from these emissions units in the annual Fee Emission Report.
5. Alternative means of compliance:

The owner or operator may choose to comply with the provisions of 40 CFR Part 65, Subpart F, to satisfy the requirements of 40 CFR 60.482 through 40 CFR 60.487 for an

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affected facility. When choosing to comply with 40 CFR Part 65, Subpart F, the requirements of 40 CFR 60.485(d), (e), and (f), and 40 CFR 60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR Part 65 are provided in 40 CFR 65.1. [40 CFR 60.480(e)(1)]