



Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

4/6/2011

Certified Mail

Paul Logsdon
Lima Refining Company
1150 South Metcalf Street
Lima, OH 45804

RE: FINAL AIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0302020012
Permit Number: P0107883
Permit Type: Administrative Modification
County: Allen

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Please complete a survey at www.epa.ohio.gov/dapc/permitsurvey.aspx and give us feedback on your permitting experience. We value your opinion.

The issuance of this PTI is a final action of the Director 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, made payable to "Ohio Treasurer Josh Mandel," 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

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 Compliance Assistance and Pollution Prevention at (614) 644-3469. If you have any questions regarding this permit, please contact the Ohio EPA DAPC, Northwest District Office. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Issued Air Pollution Control Permits" link.

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA
Ohio EPA-NWDO; Indiana



FINAL

Division of Air Pollution Control
Permit-to-Install
for
Lima Refining Company

Facility ID: 0302020012
Permit Number: P0107883
Permit Type: Administrative Modification
Issued: 4/6/2011
Effective: 4/6/2011



Division of Air Pollution Control
Permit-to-Install
for
Lima Refining Company

Table of Contents

Authorization 1
A. Standard Terms and Conditions 3
1. Federally Enforceable Standard Terms and Conditions 4
2. Severability Clause 4
3. General Requirements 4
4. Monitoring and Related Record Keeping and Reporting Requirements 5
5. Scheduled Maintenance/Malfunction Reporting 6
6. Compliance Requirements 6
7. Best Available Technology 7
8. Air Pollution Nuisance 7
9. Reporting Requirements 7
10. Applicability 8
11. Construction of New Sources(s) and Authorization to Install 8
12. Permit-To-Operate Application 9
13. Construction Compliance Certification 9
14. Public Disclosure 9
15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations 9
16. Fees 10
17. Permit Transfers 10
18. Risk Management Plans 10
19. Title IV Provisions 10
B. Facility-Wide Terms and Conditions 11
C. Emissions Unit Terms and Conditions 13
1. P006, Refinery Flare 14
2. P007, Refinery Flare 20
3. P036, Acid Gas Flare 27



Authorization

Facility ID: 0302020012
Facility Description: Petroleum Refinery and Storage
Application Number(s): M0001185
Permit Number: P0107883
Permit Description: Incorporation of New Source Performance Standards (NSPS) Subpart J applicability from paragraphs 231, 235.a. and 238.a. of the federal consent decree, for the FCC/Coker Flare, P006, and incorporation of administrative language revisions made to the Title V renewal permit to ensure consistency between PTI #03-17099 and the Title V renewal permit for the FCC/Coker flare (P006), the LIU flare (P007) and the SRU Acid Gas flare (P036).
Permit Type: Administrative Modification
Permit Fee: \$300.00
Issue Date: 4/6/2011
Effective Date: 4/6/2011

This document constitutes issuance to:

Lima Refining Company
1150 South Metcalf Street
Lima, OH 45804

of a Permit-to-Install for the emissions unit(s) identified on the following page.

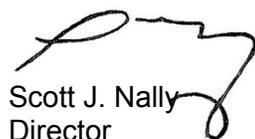
Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402
(419)352-8461

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section 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 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


Scott J. Nally
Director



Authorization (continued)

Permit Number: P0107883
Permit Description: Incorporation of New Source Performance Standards (NSPS) Subpart J applicability from paragraphs 231, 235.a. and 238.a. of the federal consent decree, for the FCC/Coker Flare, P006, and incorporation of administrative language revisions made to the Title V renewal permit to ensure consistency between PTI #03-17099 and the Title V renewal permit for the FCC/Coker flare (P006), the LIU flare (P007) and the SRU Acid Gas flare (P036).

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

- Emissions Unit ID: P006**
Company Equipment ID: Refinery Flare
Superseded Permit Number: 03-17099
General Permit Category and Type: Not Applicable
- Emissions Unit ID: P007**
Company Equipment ID: Refinery Flare
Superseded Permit Number: 03-17099
General Permit Category and Type: Not Applicable
- Emissions Unit ID: P036**
Company Equipment ID: Acid Gas Flare
Superseded Permit Number: 03-17099
General Permit Category and Type: Not Applicable

A. Standard Terms and Conditions



1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they 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 and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. 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 re-issuance, or modification.

- 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, 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 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.

4. Monitoring and Related Record Keeping and Reporting Requirements

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) 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, 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.
- 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:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Northwest District Office.
 - (2) 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 made to the Ohio EPA DAPC, Northwest District Office. The written 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. See A.15. below if no deviations occurred during the quarter.

- (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the Ohio EPA DAPC, Northwest District Office every six months, by January 31 and July 31 of each year for the previous six calendar months. 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.
 - (4) This permit is for an emissions unit located at a Title V facility. 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.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

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, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Ohio EPA DAPC, Northwest District Office 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 shall be submitted pursuant to 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 emission unit(s) that is (are) served by such control system(s).

6. Compliance Requirements

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this 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.
- c) 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:

- (1) 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.
 - (2) 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 ORC section 3704.08.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) 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.
- d) The permittee shall submit progress reports to the Ohio EPA DAPC, Northwest District Office 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:
- (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) 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.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. 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.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Northwest District Office.
- 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 state-only required 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 Ohio EPA DAPC, Northwest District Office. 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.)

10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

11. Construction of New Sources(s) and Authorization to Install

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. 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 this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit 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.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All

records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

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

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

13. Construction Compliance Certification

The applicant shall identify the following dates in the online facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. 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.

15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

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., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. 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 any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in Air Services once the transfer is legally completed. The change must be submitted through Air Services within thirty days of the ownership transfer date.

18. 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.

19. 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.

B. Facility-Wide Terms and Conditions

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.

C. Emissions Unit Terms and Conditions



1. P006, Refinery Flare

Operations, Property and/or Equipment Description:

FCC/Coker Flare, steam-assisted (PR 196128)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(F)	10.00 tons of nitrogen oxides (NOx)/yr during periods of process unit start-up and shutdown [See b)(2)d.] 90.00 tons of sulfur dioxide (SO2)/yr during periods of process unit start-up and shutdown [See b)(2)d.]
b.	40 CFR, Part 63, Subpart CC (Refinery MACT)	See b)(2)a.
c.	40 CFR Part 60.18	See b)(2)b.
d.	OAC rule 3745-21-07(J)(3)	See b)(2)c. and b)(2)e.
e.	40 CFR 63.1 through 63.15	Table 6 to 40 CFR, Part 63, Subpart CC – Applicability of General Provisions to Subpart CC shows which parts of the General Provisions in 40 CFR 63.1 – 63.15 apply.
f.	40 CFR, Part 60, Subpart A	See b)(2)f.
g.	40 CFR, Part 60, Subpart J	See b)(2)f.

(2) Additional Terms and Conditions

a. In accordance with 40 CFR, Part 63, Subpart CC, the permittee shall employ a flare to control emissions of organic hazardous air pollutants resulting from malfunctions and pressure relief episodes.

b. This emissions unit shall be designed for and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

- c. The requirements specified in OAC rule 3745-21-07(J)(3) are less stringent than the requirements specified in 40 CFR Part 60.18.
- d. The permittee has requested to voluntarily limit allowable emissions of NO_x and SO₂ to the following:
 - i. 10.00 tons of NO_x/yr during periods of process unit start-up and shutdown; and
 - ii. 90.00 tons of SO₂/yr during periods of process unit start-up and shutdown

The emission limitations are being established to alleviate reporting requirements associated with reportable quantities (RQ) under the Superfund Amendments and Reauthorization Act (SARA). The allowable limitations above do not apply to emissions associated with malfunctions and/or process upsets of the process unit. Any SO₂ emissions associated with the start-up and shutdown of the sulfur recovery unit at the facility (emissions unit P040) that are routed to this flare must still be applied to the emissions limitation of 100 lbs SO₂/1,000 lbs of sulfur processed contained in OAC rule 3745-18-08(C)(3).

- e. On February 18, 2008, OAC rule 3745-21-07 was revised in its entirety; therefore, the 21-07 rule that was in effect prior to this date is no longer part of the State regulations. On April 4, 2008, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-07, the requirement to comply with the previous 21-07 rule provisions still exists as part of the federally approved SIP for Ohio requirements.

The emission limitations and control requirements from the amended 21-07 rule, and the associated operational restrictions and the monitoring, record keeping, and reporting requirements contained in this permit, shall become federally enforceable on the date the U.S. EPA approves the revised OAC rule 3745-21-07 as a revision to the Ohio SIP. The following terms shall become federally enforceable on the date the U.S. EPA approves the rule revision: none.

- f. Pursuant to paragraph Nos. 231, 235.a. and 238.a. of the federal consent decree addendum, civil action No. SA07CA0683RF, dated 11/20/07, the permittee shall accept 40 CFR, Part 60, Subpart J applicability for this emissions source by December 31, 2010, by the operation and maintenance of a flare gas recovery system to control continuous and routine combustion for this flare.

The combustion of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunction is exempt from the requirement to comply with 40 CFR 60.104(a)(1), as per 40 CFR 60.104(a)(1).

The installation of a flare gas recovery system eliminates the need for continuous monitoring and recordkeeping for the hydrogen sulfide in the gas as otherwise required by 40 CFR 60.105(a)(4) and 40 CFR 60.7, as per paragraph 235.a. of the consent decree.

c) Operational Restrictions

- (1) The flare shall be operated at all times when emissions are being vented to it.
- (2) The flare shall be operated with a pilot flame present at all times.
- (3) Only gases with a net heating value of 11.2 MJ/scm (300 Btu/scf) or greater shall be burned in this emissions unit. Net heating value shall be calculated as specified in 40 CFR, Part 60.18(f)(3).

The flare shall be operated with an exit velocity less than 18.3 m/sec (60 ft/sec) except as specified in sections c)(4) and c)(5).

- (4) If the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf), the permittee may operate the flare at an exit velocity equal to or greater than 18.3 m/sec (60 ft/sec), but less than 122 m/sec (400 ft/sec).
- (5) Steam-assisted flares may be operated with an exit velocity less than the maximum permitted velocity, but not greater than 122 m/sec (400 ft/sec). The maximum permitted velocity shall be determined in accordance with 40 CFR, Part 60.18(f)(5).

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information during periods of start-up and shut-down:
 - a. the flare flow rate, in scf per hour;
 - b. the high heating value, in Btu/scf, as determined from the flare gas molecular weight and source of the gas;
 - c. the concentration of hydrogen sulfide in the flare gas, in weight fraction;
 - d. an indication of which process is undergoing start-up/shut-down mode;
 - e. the number of hours the process operated in start-up/shut-down mode.
 - f. the calculated NO_x emissions using the following equation:

$$E = (FR) \times (HV) \times (T) \times (EF)/1,000,000$$

where:

E = NO_x emissions in tons for each individual start-up and shut-down event

FR = flare flow rate in scf per hour

HV = high heating value, in Btu/scf

T = time duration for each start-up/shut down event, in hours

EF = NO_x emission factor of 0.068 lb of NO_x/mmBtu (AP-42 Section 13.5, Industrial Flares [9/91])

- g. the annual NOx emission rate calculated as follows:

$$E_T = E_1 + E_2 + E_3 + \dots + E_n$$

where:

E_T = Annual NOx emissions, in tons, as summed for the calendar year from January to December;

E_n = NOx emissions, in tons, for each individual start-up/shut-down event during the calendar year

- h. the calculated SO2 emissions using the following equation:

$$E = \{(FR) \times (H_2S)\} / 379.7 \times (0.98) \times (64) \times (T)$$

where:

E = SO2 emissions in tons for each individual start-up and shut-down event

FR = flare flow rate in scf per hour

H₂S = volume fraction of hydrogen sulfide in flare gas

379.7 = the volume, in ft³, of one lb mole of gas at standard conditions (60 °F & 1 atm) from the ideal gas law

0.98 = efficiency of the flare for converting a lb mole of H₂S into a lb mole of SO₂

64 = molecular weight of SO₂ in lb/lb mole

T = time duration for each start-up/shut down event, in hours

- i. the annual SO2 emission rate calculated as follows:

$$E_T = E_1 + E_2 + E_3 + \dots + E_n$$

where:

E_T = Annual SO₂ emissions, in tons, as summed for the calendar year from January to December;

E_n = SO₂ emissions, in tons, for each individual start-up/shut-down event during the calendar year

- (2) The permittee shall operate and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The monitoring device must complete a minimum of one cycle of operation for each successive 15-minute period.

The permittee shall record the following information each day:

- a. all periods during which there was no pilot flame; and
 - b. the downtime for the flare and monitoring equipment.
- (3) The permittee shall continuously monitor either visually and/or by camera whether or not there are visible emissions from the flare. Whenever the permittee observes visible emissions from the flare, the permittee shall record the start-time and end-time of visible emissions in an operations log.
- (4) Once per shift, the permittee shall verify that the flare gas recovery system is in operation. The permittee shall keep records of any instance when the flare gas recovery system was not operating.
- e) Reporting Requirements
- (1) The permittee shall submit deviation (excursion) reports that identify all periods during which the flare pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period.
 - (2) The permittee shall submit quarterly deviation reports that identify all periods during which the flare gas recovery system was not controlling continuous or routine combustion in the flare when process units are operating and generating hydrocarbon process gas. These reports shall include the date, time, and duration of each such period. The quarterly deviation reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
 - (3) The permittee shall submit quarterly deviation reports that include the start-time and end-time of visible emissions from the flare that exceed a total time of 5 minutes during any consecutive two hour period. The quarterly deviation reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
 - (4) The permittee shall submit annual reports that summarize the total annual actual emissions of NO_x and SO₂ during periods of process unit start-up and shutdown. The report shall be submitted by January 31 of each year and shall cover the previous calendar year.
- f) Testing Requirements
- (1) Compliance with the emission limitations in section b)(1) shall be determined in accordance with the following methods:
 - a. Emission Limitation:
10.00 tons of NO_x/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual NO_x emission limitation shall be demonstrated through record keeping requirements in section d)(1).

b. Emission Limitation:

90.00 tons of SO₂/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual SO₂ emission limitation shall be demonstrated through record keeping requirements in section d)(1).

c. Emission Limitation:

No visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR, Part 60, Appendix A, Method 22.

g) Miscellaneous Requirements

(1) None.



2. P007, Refinery Flare

Operations, Property and/or Equipment Description:

LIU Flare, steam-assisted (PR 196510)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(F)	10.00 tons of nitrogen oxides (NOx)/yr during periods of process unit start-up and shutdown [See b)(2)d.] 100.00 tons of sulfur dioxide (SO2)/yr during periods of process unit start-up and shutdown [See b)(2)d.]
b.	40 CFR, Part 63, Subpart CC (Refinery MACT)	See b)(2)a.
c.	40 CFR, Part 63, Subpart UUU [40 CFR 63.1560 – 63.1579] [In accordance with 40 CFR 63.1562, this emissions unit is an affected source due to its use for control of reformer depressurization and purging emissions for the catalytic reformer unit (emissions unit P030), subject to the emission limitations/control measures specified in this section.]	See b)(2)e., b)(2)f., d)(4) and f)(2)
d.	40 CFR Part 60.18	See b)(2)b.
e.	OAC rule 3745-21-07(J)(3)	See b)(2)c. and b)(2)g.

f.	40 CFR 63.1 through 63.15	<p>Table 6 to 40 CFR, Part 63, Subpart CC – Applicability of General Provisions to Subpart CC shows which parts of the General Provisions in 40 CFR 63.1 – 63.15 apply.</p> <p>Table 44 to 40 CFR, Part 63, Subpart UUU - Applicability of General Provisions to Subpart UUU shows which parts of the General Provisions in 40 CFR 63.1 – 63.15 apply.</p>
----	---------------------------	--

(2) Additional Terms and Conditions

- a. In accordance with 40 CFR, Part 63, Subpart CC, the permittee shall employ a flare to control emissions of organic hazardous air pollutants resulting from malfunctions and pressure relief episodes.
- b. This emissions unit shall be designed for and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- c. The requirements specified in OAC rule 3745-21-07(J)(3) are less stringent than the requirements specified in 40 CFR Part 60.18.
- d. The permittee has requested to voluntarily limit allowable emissions of NO_x and SO₂ to the following:
 - i. 10.00 tons of NO_x/yr during periods of process unit start-up and shutdown
 - ii. 100.00 tons of SO₂/yr during periods of process unit start-up and shutdown

The emission limitations are being established to alleviate reporting requirements associated with reportable quantities (RQ) under the Superfund Amendments and Reauthorization Act (SARA). The allowable limitations above do not apply to emissions associated with malfunctions and/or process upsets of the process unit. Any SO₂ emissions associated with the start-up and shutdown of the sulfur recovery unit at the facility (emissions unit P040) that are routed to this flare must still be applied to the emissions limitation of 100 lbs SO₂/1,000 lbs of sulfur processed contained in OAC rule 3745-18-08(C)(3).

- e. Requirements in 40 CFR, Part 63, Subpart UUU are applicable due to using this flare for control of reformer depressurization and purging of emissions.
- f. The permittee shall comply with the applicable control requirements and operating limits under 40 CFR, Part 63, Subpart UUU, including the following sections:



63.1566(a)(1) and Table 15	Vent TOC to a Flare that Meets Subpart A Requirements
63.1566(a)(2) and Table 16	Maintain Flare Pilot during Depressuring and Purging
63.1566(a)(5)	Operate According to Operation, Maintenance and Monitoring Plan
63.1566(b)(3), Table 16 and Table 18	Flare Operating Limits
63.1566(b)(6) and Table 19	Initial Compliance Demonstration for Flare - Visible Emissions

- g. On February 18, 2008, OAC rule 3745-21-07 was revised in its entirety; therefore, the 21-07 rule that was in effect prior to this date is no longer part of the State regulations. On April 4, 2008, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-07, the requirement to comply with the previous 21-07 rule provisions still exists as part of the federally approved SIP for Ohio requirements

The emission limitations and control requirements from the amended 21-07 rule, and the associated operational restrictions and the monitoring, record keeping, and reporting requirements contained in this permit, shall become federally enforceable on the date the U.S. EPA approves the revised OAC rule 3745-21-07 as a revision to the Ohio SIP. The following terms shall become federally enforceable on the date the U.S. EPA approves the rule revision: none.

c) Operational Restrictions

- (1) The flare shall be operated at all times when emissions are being vented to it.
- (2) The flare shall be operated with a pilot flame present at all times.
- (3) Only gases with a net heating value of 11.2 MJ/scm (300 Btu/scf) or greater shall be burned in this emissions unit. Net heating value shall be calculated as specified in 40 CFR Part 60.18(f)(3).

The flare shall be operated with an exit velocity less than 18.3 m/sec (60 ft/sec) except as specified in sections c)(4) and c)(5).

- (4) If the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1000 Btu/scf), the permittee may operate the flare at an exit velocity equal to or greater than 18.3 m/sec (60 ft/sec), but less than 122 m/sec (400 ft/sec).
- (5) Steam-assisted flares may be operated with an exit velocity less than the maximum permitted velocity, but not greater than 122 m/sec (400 ft/sec). The maximum permitted velocity shall be determined in accordance with 40 CFR Part 60.18(f)(5).

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record the following information during periods of start-up and shut-down:

- a. the flare flow rate, in scf per hour;
- b. the high heating value, in Btu/scf, as determined from the flare gas molecular weight and source of the gas;
- c. the concentration of hydrogen sulfide in the flare gas, in weight fraction;
- d. an indication of which process is undergoing start-up/shut-down mode;
- e. the number of hours the process operated in start-up/shut-down mode.
- f. the calculated NOx emissions using the following equation:

$$E = (FR) \times (HV) \times (T) \times (EF)/1,000,000$$

where:

E = NOx emissions in tons for each individual start-up and shut-down event

FR = flare flow rate in scf per hour

HV = high heating value, in Btu/scf

T = time duration for each start-up/shut down event, in hours

EF = NOx emission factor of 0.068 lb of NOx/mmBtu (AP-42, Section 13.5, Industrial Flares [9/91])

g. the annual NOx emission rate calculated as follows:

$$E_T = E_1 + E_2 + E_3 + \dots + E_n$$

where:

E_T = Annual NOx emissions, in tons, as summed for the calendar year from January to December;

E_n = NOx emissions, in tons, for each individual start-up/shut-down event during the calendar year

h. the calculated SO2 emissions using the following equation:

$$E = \{(FR) \times (H_2S)\} / 379.7 \times (0.98) \times (64) \times (T)$$

where:

E = SO₂ emissions in tons for each individual start-up and shut-down event

FR = flare flow rate in scf per hour

H₂S = volume fraction of hydrogen sulfide in flare gas

379.7 = the volume, in ft³, of one lb mole of gas at standard conditions (60 °F & 1 atm) from the ideal gas law

0.98 = efficiency of the flare for converting a lb mole of H₂S into a lb mole of SO₂

64 = molecular weight of SO₂ in lb/lb mole

T = time duration for each start-up/shut down event, in hours

- i. the annual SO₂ emission rate calculated as follows:

$$E_T = E_1 + E_2 + E_3 + \dots + E_n$$

where:

E_T = Annual SO₂ emissions, in tons, as summed for the calendar year from January to December;

E_n = SO₂ emissions, in tons, for each individual start-up/shut-down event during the calendar year

- (2) The permittee shall operate and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The monitoring device must complete a minimum of one cycle of operation for each successive 15-minute period.

The permittee shall record the following information each day:

- a. all periods during which there was no pilot flame; and
 - b. the downtime for the flare and monitoring equipment.
- (3) The permittee shall continuously monitor either visually and/or by camera whether or not there are visible emissions from the flare. Whenever the permittee observes visible emissions from the flare, the permittee shall record the start-time and end-time of visible emissions in an operations log.

- (4) The permittee shall comply with the applicable monitoring and recordkeeping requirements under 40 CFR, Part 63, Subpart UUU, including the following sections:

63.1566(b)(1) and Table 17	Initial Compliance Demonstration for Flare - Install Flame Monitor
63.1566(c)(1), Table 15, Table 16, Table 20 and Table 21	Continuous Compliance Demonstration for Flare - Visible Emissions and Pilot Monitoring
63.1576(d) Table 20 and Table 21	Flare Recordkeeping Requirements

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify all periods during which the flare pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period.
- (2) The permittee shall submit quarterly deviation reports that include the start-time and end-time of visible emissions from the flare that exceed a total time of 5 minutes during any consecutive two hour period. The quarterly deviation reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
- (3) The permittee shall submit annual reports that summarize the total annual actual emissions of NOx and SO2 during periods of process unit start-up and shutdown. The report shall be submitted by January 31 of each year and shall cover the previous calendar year.

f) Testing Requirements

- (1) Compliance with the emission limitations in section b)(1) shall be determined in accordance with the following methods:
 - a. Emission Limitation:
10.00 tons of NOx/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual NOx emission limitation shall be demonstrated through recordkeeping requirements in section d)(1)
 - b. Emission Limitation:
100.00 tons of SO2/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:



Compliance with the annual SO2 emission limitation shall be demonstrated through record keeping requirements in section d)(1)

c. Emission Limitation:

No visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR, Part 60, Appendix A, Method 22.

- (2) The permittee shall comply with the applicable testing requirements under 40 CFR, Part 63, Subpart UUU, including the following section:

63.1566(b)(2), Table 18, Option 1	Flare Performance Test Requirements
-----------------------------------	-------------------------------------

g) Miscellaneous Requirements

- (1) None.



3. P036, Acid Gas Flare

Operations, Property and/or Equipment Description:

SRU Acid Gas Flare, non-assisted (PR 196128)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(F)	1.00 ton of nitrogen oxides (NOx)/yr during periods of process unit start-up and shutdown [See b)(2)c.] 100.00 tons of sulfur dioxide (SO2)/yr during periods of process unit start-up and shutdown [See b)(2)c.]
b.	40 CFR, Part 63, Subpart UUU [40 CFR 63.1560 - 63.1563, and 63.1568 – 63.1579] [In accordance with 40 CFR 63.1568, this emissions unit serves as a control device for an affected source due to its use associated with the sulfur recovery unit.]	See b)(2)a.
c.	40 CFR Part 60.18	See b)(2)b.
d.	40 CFR 63.1 through 63.15	Table 44 to 40 CFR, Part 63 Subpart UUU – Applicability of General Provisions to Subpart UUU shows which parts of the General Provisions in 40 CFR 63.1 – 63.15 apply. [See b)(2)a.]

(2) Additional Terms and Conditions

- a. This flare is used to control emissions from the sulfur recovery unit, emissions unit P040, during periods of start-up, shutdown and malfunction of that emissions unit and its associated equipment. The sulfur recovery unit is subject to MACT standards in 40 CFR, Part 63, Subpart UUU. Applicable rules for the sulfur recovery unit are detailed in 40 CFR 63.1560 – 63.1563 and 63.1568 - 63.1579, and these specific requirements can be found in the terms and conditions for P040. MACT Subpart UUU does not list any specific requirements for flares used as a control device for sulfur recovery units. Table 44 of 40 CFR, Part 63, Subpart UUU details the applicable requirements of the General Provisions in 40 CFR 63.1 – 63.15 to this emissions unit.
- b. This emissions unit shall be designed for and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- c. The permittee has requested to voluntarily limit allowable emissions of NO_x and SO₂ to the following:
 - i. 1.00 ton of NO_x/yr during periods of process unit start-up and shutdown
 - ii. 100.00 tons of SO₂/yr during periods of process unit start-up and shutdown

The emission limitations are being established to alleviate reporting requirements associated with reportable quantities (RQ) under the Superfund Amendments and Reauthorization Act (SARA). The allowable limitations above do not apply to emissions associated with malfunctions and/or process upsets of the process unit. Any SO₂ emissions associated with the start-up and shutdown of the sulfur recovery unit at the facility (emissions unit P040) that are routed to this flare must still be applied to the emissions limitation of 100 lbs SO₂/1,000 lbs of sulfur processed contained in OAC rule 3745-18-08(C)(3).

c) Operational Restrictions

- (1) The flare shall be operated at all times when emissions are being vented to it.
- (2) The flare shall be operated with a pilot flame present at all times.
- (3) Only gases with a net heating value of 7.45 MJ/scm (200 Btu/scf) or greater shall be burned in this emissions unit. Net heating value shall be calculated as specified in 40 CFR Part 60.18(f)(3).

The flare shall be operated with an exit velocity less than 18.3 m/sec (60 ft/sec) except as specified in sections c)(4) and c)(5).

- (4) If the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf), the permittee may operate the flare at an exit velocity equal to or greater than 18.3 m/sec (60 ft/sec), but less than 122 m/sec (400 ft/sec).

- (5) Non-assisted flares may be operated with an exit velocity less than the maximum permitted velocity, but not greater than 122 m/sec (400 ft/sec). The maximum permitted velocity shall be determined in accordance with 40 CFR Part 60.18(f)(5).

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall collect and record the following information during periods of start-up and shut-down:
- a. the flare flow rate, in scf per hour;
 - b. the high heating value, in Btu/scf, as determined from the flare gas molecular weight and source of the gas;
 - c. the concentration of hydrogen sulfide in the flare gas, in weight fraction;
 - d. an indication of which process is undergoing start-up/shut-down mode;
 - e. the number of hours the process operated in start-up/shut-down mode.
 - f. the calculated NOx emissions using the following equation:

$$E = (FR) \times (HV) \times (T) \times (EF)/1,000,000$$

where:

E = NOx emissions in tons for each individual start-up and shut-down event

FR = flare flow rate in scf per hour

HV = high heating value, in Btu/scf

T = time duration for each start-up/shut down event, in hours

EF = NOx emission factor of 0.068 lb of NOx/mmBtu (AP-42 Section 13.5, Industrial Flares [9/91])

- g. the annual NOx emission rate calculated as follows:

$$E_T = E_1 + E_2 + E_3 + \dots + E_n$$

where:

E_T = Annual NOx emissions, in tons, as summed for the calendar year from January to December;

E_n = NOx emissions, in tons, for each individual start-up/shut-down event during the calendar year

- h. the calculated SO2 emissions using the following equation:

$$E = \{(FR) \times (H_2S)\} / 379.7 \times (0.98) \times (64) \times (T)$$

where:

E = SO2 emissions in tons for each individual start-up and shut-down event

FR = flare flow rate in scf per hour

H2S = volume fraction of hydrogen sulfide in flare gas

379.7 = the volume, in ft³, of one lb mole of gas at standard conditions (60 °F & 1 atm) from the ideal gas law

0.98 = efficiency of the flare for converting a lb mole of H2S into a lb mole of SO2

64 = molecular weight of SO2 in lb/lb mole

T = time duration for each start-up/shut down event, in hours

- i. the annual SO2 emission rate calculated as follows:

$$E_T = E_1 + E_2 + E_3 + \dots + E_n$$

where:

E_T = Annual SO2 emissions, in tons, as summed for the calendar year from January to December;

E_n = SO2 emissions, in tons, for each individual start-up/shut-down event during the calendar year

- (2) The permittee shall operate and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The monitoring device must complete a minimum of one cycle of operation for each successive 15-minute period.

The permittee shall record the following information each day:

- a. all periods during which there was no pilot flame; and
- b. the downtime for the flare and monitoring equipment.

- (3) The permittee shall continuously monitor either visually and/or by camera whether or not there are visible emissions from the flare. Whenever the permittee observes visible emissions from the flare, the permittee shall record the start-time and end-time of visible emissions in an operations log.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify all periods during which the flare pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period.
- (2) The permittee shall submit quarterly deviation reports that include the start-time and end-time of visible emissions from the flare that exceed a total time of 5 minutes during any consecutive two hour period. The quarterly deviation reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
- (3) The permittee shall submit annual reports that summarize the total annual actual emissions of NO_x and SO₂ during periods of process unit start-up and shutdown. The report shall be submitted by January 31 of each year and shall cover the previous calendar year.

f) Testing Requirements

- (1) Compliance with the emission limitations in section b)(1) shall be determined in accordance with the following methods:
 - a. Emission Limitation:
1.00 ton of NO_x/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual NO_x emission limitation shall be demonstrated through recordkeeping requirements in section d)(1)
 - b. Emission Limitation:
100.00 tons of SO₂/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual SO₂ emission limitation shall be demonstrated through record keeping requirements in section d)(1)
 - c. Emission Limitation:

No visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR, Part 60, Appendix A, Method 22.

- g) Miscellaneous Requirements
 - (1) None.