



Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
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(317) 232-8603  
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TO: Interested Parties / Applicant  
DATE: March 20, 2008  
RE: NIPSCO - Royal Center / 017-22972-00026  
FROM: Matthew Stuckey, Deputy Branch Chief  
Permits Branch  
Office of Air Quality

### Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER.dot12/03/07



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100 North Senate Avenue  
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# FEDERALLY ENFORCEABLE STATE OPERATING PERMIT RENEWAL OFFICE OF AIR QUALITY

**NIPSCO - Royal Center  
8710 North County Road 525 West  
Royal Center, Indiana 46978**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

**The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. 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 conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.**

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70, Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: F017-22972-00026	
Issued by: Original signed by  Matthew Stuckey, Deputy Branch Chief Permits Branch Office of Air Quality	Issuance Date: March 20, 2008  Expiration Date: March 20, 2018

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**SECTION A**

**SOURCE SUMMARY**

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

**A.1 General Information [326 IAC 2-8-3(b)]**

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The Permittee owns and operates a stationary a natural gas processing plant.

Source Address:	8710 North County Road 525 West, Royal Center, Indiana 46978
Mailing Address:	Arthur E. Smith, Jr. Senior Vice President and Environmental Counsel Environmental, Health and Safety 801 E. 86th Ave. Merrillville, IN 46410
General Source Phone Number:	(574) 643-9571
SIC Code:	4922
County Location:	Cass
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

**A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]**

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This stationary source consists of the following emission units and pollution control devices:

- (a) Two (2) natural gas-fired Dresser – Clark TLA-6 reciprocating engine compressors, identified as RC-9 and RC-10, constructed in 1964 and 1965, respectively, 2000 horsepower each, with a combined design heat input capacity of 30.8 MMBtu/hr. The emissions from each of the reciprocating engines exhaust through its own stack.
- (b) Two (2) strippers with natural gas-fired desulfurizer flaring stacks, identified as RC-30 #1 and #2, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 9.6 MMBtu/hr (4.8 MMBtu/hr. each).
- (c) Two (2) natural gas-fired reboilers for desulfurization, identified as RC-40 and RC-42, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 18 MMBtu/hr. (9 MMBtu/hr. each).
- (d) Three (3) dehydration reboiler process vents, identified as RC-39 #3, #4, and #5, constructed in 1966, with a combined design throughput of 180 million cubic feet per day (60 million cubic feet per day each). The dehydration reboiler process vents are part of the natural gas cleanup system. The vents from RC-39 #3 and RC-39 #4 are exhausted to a thermal oxidizer (RC-57TO). RC-39 #5 is a backup unit and is currently used for emergency system redundancy. The RC-39 #5 reboiler process vent is not exhausted through the thermal oxidizer RC-57TO.
- (e) Thermal oxidizer, identified as RC-57TO, placed in service in January 2006, with a design heat input capacity of 2.455 MMBtu/hr. The thermal oxidizer is part of the natural

gas cleanup system. Exhaust from the dehydration reboiler process vents RC-39 #3 and #4 is routed through the thermal oxidizer prior to exhaust to the atmosphere.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. The unit in the compressor building was installed in 1996. [326 IAC 8-3]
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: [326 IAC 6-2-3]
  - (1) Three (3) natural gas-fired reboilers for dehydration, identified as RC-36, RC-37, and RC-38, all three (3) constructed in 1966, with a combined maximum capacity of 9 MMBtu/hr.
  - (2) Three (3) natural gas-fired boilers, identified as RC-45, RC-51, and RC-52, constructed in 1965, 1962, and 1965, with a combined maximum capacity of 2.17 MMBtu/hr.
  - (3) Various space heaters with a combined heat input capacity of 5.2 MMBtu/hr.
- (c) Stockpiled soils from soil remediation activities that are covered and waiting transportation for disposal. [326 IAC 6-4]
- (d) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs less than twelve thousand (12,000) gallons.
- (e) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (f) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than 6 MMBtu/hr.
- (g) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hr, except where total capacity of equipment operated by one stationary source exceeds 2 MMBtu/hr.
- (h) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume including: one (1) concrete tank, identified as RC-7, constructed in October 1983, consisting of an outer section and an inner section with a combined maximum capacity of 360,000 gallons, whose purpose is the clarification of process water prior to re-injection into underground storage facilities.
- (i) Heat exchanger cleaning and repair.
- (j) Purging of gas lines and vessels that is related to routing maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.
- (k) Blowdown for any of the following: sight glass, boiler, compressors, pumps, and cooling tower.
- (l) Emergency generators as follows:

- (1) Gasoline generators not exceeding 110 horsepower;
  - (2) Diesel generators not exceeding 1,600 horsepower; and
  - (3) Natural gas turbines or reciprocating engines not exceeding 16,000 horsepower.
  - (4) One (1) natural gas-fired emergency generator, a Waukesha Enginator, reciprocating engine, model L 7040 G, identified as RC-2, constructed in 1965, with design heat input capacity of 7 MMBtu/hr.
- (m) Purge double block and bleed valves.
- (n) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.
- (o) Emission units with single HAP emissions less than one (1) ton per year and combination HAPs emissions less than two and a half (2.5) tons per year.

A.4 FESOP Applicability [326 IAC 2-8-2]

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This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

## SECTION B GENERAL CONDITIONS

### B.1 Definitions [326 IAC 2-8-1]

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Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

### B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

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- (a) This permit, 017-22972-00026, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

### B.3 Term of Conditions [326 IAC 2-1.1-9.5]

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Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

### B.4 Enforceability [326 IAC 2-8-6]

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Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

### B.5 Severability [326 IAC 2-8-4(4)]

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The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

### B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

### B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

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- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1)

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was continuous or intermittent;
  - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
  - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Emergency Provisions [326 IAC 2-8-12]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
  - (2) The permitted facility was at the time being properly operated;
  - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
  - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,  
Compliance Section), or  
Telephone Number: 317-233-0178 (ask for Compliance Section)  
Facsimile Number: 317-233-6865

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
- (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
  - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
    - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

- (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

**B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of permits established prior to 017-22972-00026 and issued pursuant to permitting programs approved into the state implementation plan have been either:
- (1) incorporated as originally stated,
  - (2) revised, or
  - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

**B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]**

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The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

**B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]**

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- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination  
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

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- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
  - (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.17 Permit Renewal [326 IAC 2-8-3(h)]

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- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
  - (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
  - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (d) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
- (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(2), (c)(1), and (d).

- (b) Emission Trades [326 IAC 2-8-15(c)]  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

**B.20 Source Modification Requirement [326 IAC 2-8-11.1]**

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A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

**B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]**

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Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

**SECTION C SOURCE OPERATION CONDITIONS**

Entire Source

**Emission Limitations and Standards [326 IAC 2-8-4(1)]**

**C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

**C.2 Overall Source Limit [326 IAC 2-8]**

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(c) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

**C.3 Opacity [326 IAC 5-1]**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

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The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

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The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

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The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.7 Stack Height [326 IAC 1-7]

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The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

- (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
- (2) If there is a change in the following:
  - (A) Asbestos removal or demolition start date;
  - (B) Removal or demolition contractor; or
  - (C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-52 IGCN 1003  
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) **Procedures for Asbestos Emission Control**  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**  
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

### **Testing Requirements [326 IAC 2-8-4(3)]**

#### **C.9 Performance Testing [326 IAC 3-6]**

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- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted

by IDEM, OAQ if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

### **Compliance Requirements [326 IAC 2-1.1-11]**

#### **C.10 Compliance Requirements [326 IAC 2-1.1-11]**

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The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

### **Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]**

#### **C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]**

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Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

#### **C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]**

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Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

#### **C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]**

---

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

**Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]**

**C.14 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]**

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If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

**C.15 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]**

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- (a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
- (1) initial inspection and evaluation;
  - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
  - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
- (1) monitoring results;
  - (2) review of operation and maintenance procedures and records; and/or
  - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall maintain the following records:
- (1) monitoring data;
  - (2) monitor performance data, if applicable; and
  - (3) corrective actions taken.

**C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]**

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- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

#### **C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]**

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- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

#### **C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

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- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:  
  
Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

### **Stratospheric Ozone Protection**

#### **C.19 Compliance with 40 CFR 82 and 326 IAC 22-1**

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Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emission Unit Descriptions:

- (a) Two (2) natural gas-fired Dresser – Clark TLA-6 reciprocating engine compressors, identified as RC-9 and RC-10, constructed in 1964 and 1965, respectively, 2000 horsepower each, with a combined design heat input capacity of 30.8 MMBtu/hr. The emissions from each of the reciprocating engines exhaust through its own stack.
- (b) Two (2) strippers with natural gas-fired desulfurizer flaring stacks, identified as RC-30 #1 and #2, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 9.6 MMBtu/hr (4.8 MMBtu/hr. each).
- (c) Two (2) natural gas-fired reboilers for desulfurization, identified as RC-40 and RC-42, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 18 MMBtu/hr. (9 MMBtu/hr. each).
- (d) Three (3) dehydration reboiler process vents, identified as RC-39 #3, #4, and #5, constructed in 1966, with a combined design throughput of 180 million cubic feet per day (60 million cubic feet per day each). The dehydration reboiler process vents are part of the natural gas cleanup system. The vents from RC-39 #3 and RC-39 #4 are exhausted to a thermal oxidizer (RC-57TO). RC-39 #5 is a backup unit and is currently used for emergency system redundancy. The RC-39 #5 reboiler process vent is not exhausted through the thermal oxidizer RC-57TO.

### Insignificant Activities:

- (b) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: [326 IAC 6-2-3]
  - (1) Three (3) natural gas-fired reboilers for dehydration, identified as RC-36, RC-37, and RC-38, all three (3) constructed in 1966, with a combined maximum capacity of 9 MMBtu/hr.
  - (2) Three (3) natural gas-fired boilers, identified as RC-45, RC-51, and RC-52, constructed in 1965, 1962, and 1965, with a combined maximum capacity of 2.17 MMBtu/hr.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions. The emission unit identifiers in the emission unit box correspond to the emission units listed both in the TSD and Conditions A.2 and A.3.)

### Emission Limitations and Standards [326 IAC 2-8-4(1)]

#### D.1.1 FESOP Limit [326 IAC 2-8] [326 IAC 2-4.1]

The source shall limit emissions of each of the following pollutants to less than one hundred (100) tons per twelve (12) consecutive month period: NO<sub>x</sub>, CO, and SO<sub>2</sub>.

- (a) The NO<sub>x</sub> and CO limitations shall be achieved by the following limits:
  - (1) The combined natural gas fuel usage for the compressor engines (RC-9 and RC-10) and the emergency generator (RC-2) shall be limited to less than 56 million cubic feet per twelve (12) consecutive month period.

- (2) The combined natural gas fuel usage for the desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38), and the thermal oxidizer (RC-57TO) shall be limited to 102 million cubic feet per twelve (12) consecutive month period.
  - (3) These limits are structured such that, when including the emissions from natural gas-fired boilers (RC-45, RC-51, and RC-52), the source-wide total emissions of NO<sub>x</sub> and CO are each less than one hundred (100) tons per twelve (12) consecutive month period.
- (b) The SO<sub>2</sub> shall be limited as follows:
- (1) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) is limited to less than 28,230 million cubic feet per twelve (12) consecutive month period.
  - (2) These limits are structured such that the source-wide total emissions of SO<sub>2</sub> are less than 100 tons per twelve (12) consecutive month period.

Compliance with these limits renders 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-4.1 (Hazardous Air Pollutants) not applicable.

#### D.1.2 Particulate Matter (PM) [326 IAC 6-2-3]

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Pursuant 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), the particulate matter (PM) from natural gas-fired reboilers for dehydration (RC-36, RC-37, and RC-38), natural gas-fired reboilers for desulfurization (RC-40 and RC-42), natural gas-fired boilers (RC-45, RC-51, and RC-52) shall each be limited to 0.8 lb/MMBtu.

#### D.1.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for any gas meters being used to monitor compliance for the flaring stacks (RC-30 #1 and #2).

### Compliance Determination Requirements

#### D.1.4 Compliance Determination

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- (a) Compliance with Condition D.1.1 shall be determined by the following:
- (1) Compliance with Condition D.1.1(a) shall be determined by measuring the gas usage for Units RC-9 and RC-10, RC-30 #1 and #2, RC-40, RC-42, RC-36, RC-37, and RC-38 using twelve (12) consecutive month composites of gas meter readings unless the gas meters are not functioning properly, in which case gas usage shall be estimated based on engineering judgement until such time as the gas meters are functioning properly.
  - (2) Compliance with Condition D.1.1(b) shall be determined by measuring the amount of process gas treated in the desulfurization system. H<sub>2</sub>S testing shall be conducted once during each natural gas withdrawal season using a representative sample of the entire field gas. The SO<sub>2</sub> emissions shall be calculated using the following equation:

$$\text{SO}_2 \text{ emissions (lb/MMCF)} = 1,685 \times S$$

Where, S = the H<sub>2</sub>S content of the gas (mole %)

1 mole % H<sub>2</sub>S = 627 grains H<sub>2</sub>S / 100 standard cubic feet

- (b) Compliance with Condition D.1.2 shall be determined by an annual certification that only natural gas was combusted. This certification shall be based on the physical limitation that no other fuel can be combusted.

**D.1.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

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During the withdrawal season and after issuance of this FESOP, in order to demonstrate compliance with Condition D.1.1(b), the Permittee shall perform H<sub>2</sub>S testing on a representative sample of the natural gas from the underground field storage utilizing methods as approved by the Commissioner. This test shall be repeated at least once every withdrawal season.

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**D.1.6 Record Keeping Requirements**

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- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken monthly and shall be complete and sufficient to establish compliance with the fuel and process gas usage limits established in Condition D.1.1.
- (1) The natural gas fuel usage for the two compressor engines (RC-9 and RC-10), the emergency generator (RC-2), the desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38) and the thermal oxidizer (RC-57TO) or maintain a record of the reason why the fuel usage notations were not recorded.
- (2) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) or maintain record of the reason why the notation of the quantity of process gas treated was not recorded.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**D.1.7 Reporting Requirements**

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A quarterly summary of the information to document compliance with Condition D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

Specifically Regulated Insignificant Activities

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. The unit in the compressor building was installed in 1996. [326 IAC 8-3]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions. The emission unit identifiers in the emission unit box correspond to the emission units listed both in the TSD and Conditions A.2 and A.3.)

### Emission Limitations and Standards [326 IAC 2-8-4(1)]

#### D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### D.2.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:
- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
    - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
    - (B) The solvent is agitated; or
    - (C) The solvent is heated.
  - (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at

thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
  - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
  - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
    - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
    - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
    - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
  - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
  - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
CERTIFICATION**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify) \_\_\_\_\_
- Report (specify) \_\_\_\_\_
- Notification (specify) \_\_\_\_\_
- Affidavit (specify) \_\_\_\_\_
- Other (specify) \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE BRANCH  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
Indianapolis, Indiana 46204-2251  
Phone: 317-233-0178  
Fax: 317-233-6865**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY OCCURRENCE REPORT**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026

**This form consists of 2 pages**

**Page 1 of 2**

- |  |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none"><li>• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and</li><li>• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16</li></ul> |
|--|

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency?    Y    N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
SEMI- ANNUAL NATURAL GAS FIRED BOILER CERTIFICATION**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026  
Facility: Reboilers for Dehydration (RC-36, RC-37, and RC-38), Reboilers for  
Desulfurization (RC-40 and RC-42), Boilers (RC-45, RC-51, and RC-52)

Natural Gas Only  
 Alternate Fuel burned  
From: \_\_\_\_\_ To: \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**FESOP Quarterly Report**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026  
Facility: Two (2) compressor engines (RC-9 and RC-10) and an emergency generator (RC-2)  
Parameter: Natural gas usage  
Limit: Less than 56 million cubic feet per twelve (12) consecutive month period

YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**FESOP Quarterly Report**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026  
Facility: The desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38), and the thermal oxidizer (RC-57TO)  
Parameter: Natural gas usage  
Limit: Less than 102 million cubic feet per twelve (12) consecutive month period

YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**FESOP Quarterly Report**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026  
Facility: The desulfurization system utilizing flaring stacks (RC-30 #1 and #2)  
Parameter: Process gas treated  
Limit: Less than 28,230 million cubic feet per twelve (12) consecutive month period

YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
Title / Position: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION  
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: NIPSCO - Royal Center  
Source Address: 8710 North County Road 525 West, Royal Center, Indiana 46978  
Mailing Address: Environmental, Health and Safety  
801 E. 86th Ave.  
Merrillville, IN 46410  
FESOP Permit No.: 017-22972-00026

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

# Indiana Department of Environmental Management Office of Air Quality

## Addendum to the Technical Support Document to a Federally Enforceable State Operating Permit (FESOP)

### Source Background and Description

Source Name:	NIPSCO - Royal Center
Source Location:	8710 North County Road 525 West, Royal Center, Indiana 46978
County:	Cass
SIC Code:	4922
Operation Permit No.:	F017-14192-00026
Operation Permit Issuance Date:	December 11, 2001
Permit Renewal No.:	F017-22972-00026
Permit Reviewer:	ERG/BL

On September 28, 2007, the Office of Air Quality (OAQ) had a notice published in the Pharos Tribune, in Logansport, Indiana, stating that NIPSCO- Royal Center had applied for a Permit Renewal to their Federally Enforceable State Operating Permit (FESOP). The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On October 29, 2007, comments on the draft permit were submitted by John M. Ross of NiSource Corporate Services on behalf of NIPSCO - Royal Center. The summary of the comments is as follows. Changes made as a result of these comments are shown throughout this addendum. New language is in **bold** while deleted language is in ~~strikeout~~. The Table of Contents has been updated as necessary.

#### Comment 1:

Mr. Ross commented that the previous FESOP Renewal No. 017-14192-00026 included authorized individual by position title (i.e., Manager, Gas Storage Operations). Mr. Ross recommends the title of the authorized individual be included in this Permit Renewal No. 017-22972-00026.

#### Response to Comment 1:

IDEM, OAQ has decided to remove the information regarding the authorized individual from Section A.1 of the permit. Listing the name and/or title in the permit has resulted in unnecessary administrative amendments in the past. Therefore, IDEM, OAQ does not consider it beneficial to maintain or update this information in the permits. IDEM, OAQ will continue to retain this information up-to-date in their permit tracking system. No change to the permit was made based on this comment.

#### Comment 2:

Mr. Ross commented that the emission unit description A .2 (a) gives the impression that the reciprocating engine compressors identified as RC-9 and RC-10 exhaust through a common stack. These units exhaust through individual stacks. The language should be clarified to indicate that each unit has its own individual exhaust stack.

**Response to Comment 2:**

IDEM has revised the descriptive information as follows.

**A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]**

This stationary source consists of the following emission units and pollution control devices:

- (a) Two (2) natural gas-fired Dresser – Clark TLA-6 reciprocating engine compressors, identified as RC-9 and RC-10, constructed in 1964 and 1965, respectively, 2000 horsepower each, with a combined design heat input capacity of 30.8 MMBtu/hr. ~~The two~~ **emissions from each of the** reciprocating engines exhaust through **a its own** stack.

...

**SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS**

**Emission Unit Descriptions:**

- (a) Two (2) natural gas-fired Dresser – Clark TLA-6 reciprocating engine compressors, identified as RC-9 and RC-10, constructed in 1964 and 1965, respectively, 2000 horsepower each, with a combined design heat input capacity of 30.8 MMBtu/hr. ~~The two~~ **emissions from each of the** reciprocating engines exhaust through **a its own** stack.

...

**Comment 3:**

The emission unit description for the process vessel degreasing and cleaning operation states two (2) construction dates. The second sentence referring to the unit in the shop building that was installed before 1980 should be deleted.

**Response to Comment 3:**

The following change has been made to the permit as a result of this comment:

**A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]**

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. ~~The unit in the shop building was installed before 1980.~~ The unit in the compressor building was installed in 1996. [326 IAC 8-3]

...

**SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS**

**Facility Description [326 IAC 2-8-4(10)]:**

Specifically Regulated Insignificant Activities

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. ~~The unit in the shop building was installed before 1980.~~ The unit in the compressor building was installed in 1996. [326 IAC 8-3]

...

**Comment 4:**

Mr. Ross requests that Section A.3 include all insignificant activities from the Permit Renewal No. 017-14192-00026 issued December 11, 2001. These insignificant activities are also listed in the TSD of Renewal No. 017-22972-00026.

**Response to Comment 4:**

IDEM agrees that Section A.3 should include all insignificant activities. The following changes have been made to the permit as a result of this comment:

**A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]**

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. ~~The unit in the shop building was installed before 1980.~~ The unit in the compressor building was installed in 1996. [326 IAC 8-3]
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: [326 IAC 6-2-3]
  - (1) Three (3) natural gas-fired reboilers for dehydration, identified as RC-36, RC-37, and RC-38, all three (3) constructed in 1966, with a combined maximum capacity of 9 MMBtu/hr.
  - (2) Three (3) natural gas-fired boilers, identified as RC-45, RC-51, and RC-52, constructed in 1965, 1962, and 1965, with a combined maximum capacity of 2.17 MMBtu/hr.
  - (3) Various space heaters with a combined heat input capacity of 5.2 MMBtu/hr.
- (c) Stockpiled soils from soil remediation activities that are covered and waiting transportation for disposal. [326 IAC 6-4]
- (d) **Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs less than twelve thousand (12,000) gallons.**
- (e) **Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.**
- (f) **Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than 6 MMBtu/hr.**
- (g) **Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hr, except where total capacity of equipment operated by one stationary source exceeds 2 MMBtu/hr.**
- (h) **Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume including: one (1) concrete tank, identified as RC-7, constructed in October 1983, consisting of an outer section and an inner section with a combined maximum capacity of 360,000 gallons, whose purpose is the clarification of process water prior to re-injection into underground storage facilities.**
- (i) **Heat exchanger cleaning and repair.**

- (j) **Purging of gas lines and vessels that is related to routing maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.**
- (k) **Blowdown for any of the following: sight glass, boiler, compressors, pumps, and cooling tower.**
- (l) **Emergency generators as follows:**
  - (1) **Gasoline generators not exceeding 110 horsepower;**
  - (2) **Diesel generators not exceeding 1,600 horsepower; and**
  - (3) **Natural gas turbines or reciprocating engines not exceeding 16,000 horsepower.**
  - (4) **One (1) natural gas-fired emergency generator, a Waukesha Enginator, reciprocating engine, model L 7040 G, identified as RC-2, constructed in 1965, with design heat input capacity of 7 MMBtu/hr.**
- (m) **Purge double block and bleed valves.**
- (n) **A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.**
- (o) **Emission units with single HAP emissions less than one (1) ton per year and combination HAPs emissions less than two and a half (2.5) tons per year.**

**Comment 5:**

Mr. Ross requests that the FESOP renewal permit term be extended to ten (10) years.

**Response to Comment 5:**

On December 16, 2007, rule revisions to 326 IAC 2-1.1-9 and 326 IAC 2-8-4 were finalized allowing for ten (10) year permit terms on FESOP renewals. Therefore, the expiration date for this permit has been extended by five (5) years. Condition B.2 has been revised to reflect the ten (10) year permit renewal term. The following changes have been made to the permit as a result of this request: The cover page will also reflect the ten (10) year permit renewal term.

**B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]**

---

- (a) This permit, 017-22972-00026, is issued for a fixed term of ~~five (5)~~ **ten (10)** years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

...

**Comment 6:**

Mr. Ross requests the language of Condition B.3 (Term of Conditions [326 IAC 2-1.1-9.5]) be modified as follows to reflect regulatory applicability:

**B.3 Term of Conditions [326 IAC 2-1.1-9.5]**

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Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved into the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

**Response to Comment 6:**

Paragraph (a) in Condition B.3 refers to requirements established pursuant to Title I of the Clean Air Act (CAA). These include New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants, Prevention of Significant Deterioration (PSD) and Emission Offset for nonattainment areas. Since paragraph (a) correctly references Title I of the CAA as written, no changes have been made as a result of this comment.

**Comment 7:**

Throughout the permit, limits are expressed in terms of twelve (12) consecutive month periods. These limits are inconsistent with regulatory language. Limits should be expressed in terms of a yearly basis (i.e., per year). Specific conditions with expressed in terms of twelve (12) consecutive month periods include: condition C.2 (a)(1), (a)(2), (a)(3) and C.2(b); and condition D.1.1.

**Response to Comment 7:**

IDEM limits are not expressed in terms of calendar year, because sources must comply with limits on a rolling twelve (12) month basis. Time periods for limits must be small enough to allow compliance to be determined at a sufficient enough frequency that a violation can be observed and enforced quickly. IDEM requires compliance be determined at the end of each month for the previous twelve month period. No change to the permit was made based on this comment.

**Comment 8:**

The paragraph in permit Condition C.2(a)(1) is incorrect. NIPSCO - Royal Center is not in 1 of 28 source categories defined in 326 IAC 2-2-1(gg) and Cass County has been classified as attainment for all regulated pollutants. Therefore, a limit of two hundred fifty (250) tons per year will render 326 IAC 2-2 (PSD) not applicable.

**Response to Comment 8:**

The following changes have been made to the permit as a result of this comment:

**C.2 Overall Source Limit [326 IAC 2-8]**

---

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

- (a) Pursuant to 326 IAC 2-8:
- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. ~~This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.~~
  - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
  - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

- (b) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (c) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

**Comment 9:**

In the emission unit box in Section D.1, Mr. Ross recommends the following revisions to the emission unit identifiers:

The "(b)" identifier for the insignificant Natural gas-fired combustion sources should be relabeled "(e)". With this revision the emission units in the Section D.1 box will follow an alphabetically chronology.

**Response to Comment 9:**

The emission unit identifiers in the emission unit box correspond to the emission units listed both in the TSD and Conditions A.2 and A.3. For this reason the identifiers have not been changed. A footnote has been added to each text boxes in Sections D.1 and D.2 to clarify the relationship between Conditions A.2 and A.3.

**SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS**

**Emission Unit Descriptions:**

- (a) Two (2) natural gas-fired Dresser – Clark TLA-6 reciprocating engine compressors, identified as RC-9 and RC-10, constructed in 1964 and 1965, respectively, 2000 horsepower each, with a combined design heat input capacity of 30.8 MMBtu/hr. The ~~two~~ **emissions from each of the** reciprocating engines exhaust through a **its own** stack.
- (b) Two (2) strippers with natural gas-fired desulfurizer flaring stacks, identified as RC-30 #1 and #2, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 9.6 MMBtu/hr (4.8 MMBtu/hr. each).
- (c) Two (2) natural gas-fired reboilers for desulfurization, identified as RC-40 and RC-42, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 18 MMBtu/hr. (9 MMBtu/hr. each).
- (d) Three (3) dehydration reboiler process vents, identified as RC-39 #3, #4, and #5, constructed in 1966, with a combined design throughput of 180 million cubic feet per day (60 million cubic feet per day each). The dehydration reboiler process vents are part of the natural gas cleanup system. The vents from RC-39 #3 and RC-39 #4 are exhausted to a thermal oxidizer (RC-57TO). RC-39 #5 is a backup unit and is currently used for emergency system redundancy. The RC-39 #5 reboiler process vent is not exhausted through the thermal oxidizer RC-57TO.

**Insignificant Activities:**

- (b) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: [326 IAC 6-2-3]
  - (1) Three (3) natural gas-fired reboilers for dehydration, identified as RC-36, RC-37, and RC-38, all three (3) constructed in 1966, with a combined maximum capacity of 9 MMBtu/hr.
  - (2) Three (3) natural gas-fired boilers, identified as RC-45, RC-51, and RC-52, constructed

in 1965, 1962, and 1965, with a combined maximum capacity of 2.17 MMBtu/hr.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions. **The emission unit identifiers in the emission unit box correspond to the emission units listed both in the TSD and Conditions A.2 and A.3.**)

...

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

#### Specifically Regulated Insignificant Activities

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. ~~The unit in the shop building was installed before 1980.~~ The unit in the compressor building was installed in 1996. [326 IAC 8-3]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions. **The emission unit identifiers in the emission unit box correspond to the emission units listed both in the TSD and Conditions A.2 and A.3.** )

### Comment 10:

Condition D.1.1 should be revised to exclude limits that are identical to the emission factor contained in the EPA's AP-42 Chapter 3.2 - Natural Gas-fired Reciprocating Engines (August 2000 edition). It is inappropriate to require compliance with an emission factor. The effective limitation for these units is a fuel input quantity limitation that is calculated based upon the use of the AP-42 emission factor. Such a limitation is already included in the annual fuel input limitation "less than 56 million cubic feet" in Condition D.1.1(a). Although Mr. Ross agrees that both components contribute to the demonstration that the Title V applicability emission thresholds (10 tons per year for single HAP, 25 tons per year for total combined HAPs, and 100 tons per year for all other regulated pollutants) are not exceeded. Mr. Ross believes the use of an AP-42 emission factor, as a separate compliance condition (limit) within the FESOP, is inappropriate, unlawful, and arbitrary and capricious, and should be removed from the permit.

### Response to Comment 10:

Upon further review, IDEM has agreed to remove the short term limits.

### D.1.1 FESOP Limit [326 IAC 2-8] [326 IAC 2-4.1]

...

- (1) The combined natural gas fuel usage for the compressor engines (RC-9 and RC-10) and the emergency generator (RC-2) shall be limited to less than 56 million cubic feet per twelve (12) consecutive month period. ~~The NO<sub>x</sub>, CO, and HAP emissions from the compressor engines and emergency generator shall be limited as follows:~~
- (i) ~~NO<sub>x</sub> emissions shall not exceed, 3,233 lbs of NO<sub>x</sub> per Million Cubic Feet Natural Gas Burned.~~
  - (ii) ~~CO emissions shall not exceed 394 lbs of CO per Million Cubic Feet Natural Gas Burned.~~

...

- (2) The combined natural gas fuel usage for the desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38), and the thermal oxidizer (RC-57TO) shall be limited to 102 million cubic feet per twelve (12) consecutive month period. This natural gas fuel usage limitation is necessary to limit NO<sub>x</sub> emissions to less than 5.1 tons per twelve (12) consecutive month period. ~~NO<sub>x</sub> emissions shall not exceed 100 lbs of NO<sub>x</sub> per Million Cubic Feet Natural Gas Burned. CO emissions shall not exceed 84 lbs of CO per Million Cubic Feet Natural Gas Burned.~~
  - (3) These limits are structured such that, when including the emissions from natural gas-fired boilers (RC-45, RC-51, and RC-52), the source-wide total emissions of NO<sub>x</sub> and CO are **each** less than one hundred (100) tons per twelve (12) consecutive month period.
- (b) The SO<sub>2</sub> shall be limited as follows:
- (1) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) is limited to less than 28,230 million cubic feet per twelve (12) consecutive month period. ~~SO<sub>2</sub> emissions shall not exceed 6.72 lb/MMCF.~~

...

**Comment 11:**

Mr. Ross believes the language of Condition D.1.1(a)(3) that includes a statement indicating "...total emissions of NO<sub>x</sub> and CO are less than one hundred (100) tons..." should be revised to clarify that this is not a limit for the combined total of emissions of NO<sub>x</sub> with CO, but is an annual limit of 100 tons on an individual pollutant basis, i.e., 100 tons per year NO<sub>x</sub>; 100 tons per year CO.

**Response to Comment 11:**

The following clarifications have been made to the permit limits as a result of this comment.

**D.1.1 FESOP Limit [326 IAC 2-8] [326 IAC 2-4.1]**

The source shall limit ~~NO<sub>x</sub>, CO, and SO<sub>2</sub>~~ emissions **of each of the following pollutants** to less than one hundred (100) tons per twelve (12) consecutive month period: **NO<sub>x</sub>, CO, and SO<sub>2</sub>** . . .

...

- (3) These limits are structured such that, when including the emissions from natural gas-fired boilers (RC-45, RC-51, and RC-52), the source-wide total emissions of NO<sub>x</sub> and CO are **each** less than one hundred (100) tons per twelve (12) consecutive month period.

**Comment 12:**

Mr. Ross believes the language of Condition D.1.1(b)(2) should be revised to be more consistent with the limit in D.1.1(a)(3).

### Response to Comment 12:

The following change has been made to the permit as a result of this comment:

#### D.1.1 FESOP Limit [326 IAC 2-8] [326 IAC 2-4.1]

---

The source shall limit ~~NO<sub>x</sub>, CO, and SO<sub>2</sub>~~ emissions of each of the following pollutants to less than one hundred (100) tons per twelve (12) consecutive month period: **NO<sub>x</sub>, CO, and SO<sub>2</sub>** . . .

...

(b) The SO<sub>2</sub> shall be limited as follows:

- (1) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) is limited to less than 28,230 million cubic feet per twelve (12) consecutive month period. ~~SO<sub>2</sub> emissions shall not exceed 6.72 lb/MMCF.~~
- (2) These limits are structured such that the ~~potential to emit~~ **source-wide total emissions** of SO<sub>2</sub> ~~to be~~ are less than 100 tons per twelve (12) consecutive month period.

### Comment 13:

For the SO<sub>2</sub> compliance determination, Mr. Ross believes the first sentence of Condition D.1.4(a)(2) should be revised to be more consistent with the limit in D.1.1(b)(1).

Mr. Ross believes the second sentence of Condition D.1.4(a)(2), that addresses the H<sub>2</sub>S testing, should be deleted, it conflicts with the testing frequency specified in Condition D.1.5. Mr. Ross recommends the testing of the H<sub>2</sub>S concentration in the natural gas withdrawn from the storage field be done as follows: at least once every five (5) years, the sample be collected during the natural gas withdrawal season, and the sampling location be such that the sample is representative of the natural gas withdrawn from the storage field.

Condition D.1.5, the "Compliance Determination Requirements" for testing the H<sub>2</sub>S concentration from the flaring stacks RC-30 #1 and #2 are unnecessary and unachievable, and should be deleted. In the EPA's AP-42 chapter (Chapter 5) cited in the TSD for this process EPA indicates that almost one hundred (100) percent of the H<sub>2</sub>S in the natural gas from the gas cleanup system that is flared is converted to SO<sub>2</sub> so there is no purpose in requiring testing for H<sub>2</sub>S emissions from the flare stack. In addition, Mr. Ross stated that he is not aware of an EPA reference methodology to test a flare stack for these emissions. If any testing is required, it would make more sense that the requirement be for testing of the H<sub>2</sub>S concentration in the natural gas that is being withdrawn from the storage field consistent with use in the EPA AP-42 emissions calculation formula listed in condition D.1.4(a)(2).

### Response to Comment 13:

IDEM has revised the Condition D.1.4(a)(2) to be more consistent with D.1.1(b)(1) and D.1.5. In order to demonstrate compliance with D.1.1(b), Condition D.1.5 requires that H<sub>2</sub>S testing be conducted on gas being withdrawn from the storage field.

The following changes have been made to the permit as a result of this comment:

#### D.1.4 Compliance Determination

---

(a) Compliance with Condition D.1.1 shall be determined by the following:

- (1) Compliance with Condition D.1.1(a) shall be determined by ~~monitoring~~ **measuring** the gas usage for Units RC-9 and RC-10, RC-30 #1 and #2, RC-40, RC-42, RC-36, RC-37, and RC-38 using twelve (12) consecutive month composites of gas meter readings unless the gas meters are not functioning

properly, in which case gas usage shall be estimated based on engineering judgement until such time as the gas meters are functioning properly.

- (2) Compliance with Condition D.1.1(b) shall be determined by ~~monitoring~~ **measuring** the ~~monthly gas treated through the flaring stacks RC-30 #1 and #2~~ **amount of process gas treated in the desulfurization system** during the time period in which natural gas is withdrawn from underground storage and processed through the desulfurization system. H<sub>2</sub>S testing shall be conducted annually **once** during the **each** natural gas withdrawal season ~~from using a representative sample location characteristic of the entire field gas.~~ **The SO<sub>2</sub> emissions shall be calculated using** for appropriate use in the following equation:

$$\text{SO}_2 \text{ emissions (lb/MMCF)} = 1,685 \times S$$

Where, S = the H<sub>2</sub>S content of the gas (mole %)

$$1 \text{ mole \% H}_2\text{S} = 627 \text{ grains H}_2\text{S} / 100 \text{ standard cubic feet}$$

...

#### D.1.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

During the withdrawal season and after issuance of this FESOP, in order to demonstrate compliance with Condition ~~D.1.2~~ **D.1.1(b)**, the Permittee shall perform H<sub>2</sub>S testing for flaring stacks RC-30 #1 and #2 **on a representative sample of the natural gas from the underground field storage** utilizing methods as approved by the Commissioner. This test shall be repeated at least once every **withdrawal season** ~~five (5) years from the date of this valid compliance demonstration.~~ Testing shall be conducted in accordance with Section C-Performance Testing.

#### Comment 14:

Mr. Ross believes Condition D.1.6 is excessive, unnecessary, and should be deleted. There is no regulation, statute, or other law that requires or authorizes IDEM to impose these requirements. This condition is unauthorized by law, arbitrary and capricious, and unreasonable. The thermal oxidizer, identified as RC-57TO, was installed voluntarily and is not required to meet any legal or regulatory requirement. Therefore, a continuous monitoring system is not required.

A potential case could be made to justify the requirement for installation and operation of a continuous monitoring system for the temperature of the thermal oxidizer system if Royal Center were a major source of HAP emissions or uncontrolled VOC emissions were greater than 100 tons per year. However, this is not the case.

The IDEM apparently double counted the HAP emissions from the dehydration reboiler vents in the "Potential To Emit" (page 1 of 14 in the TSD Appendix A, upper table) by including them in the HAPs column in both row two (2) and row four (4). Correction of this double counting reduces the total HAPs to less than the 25 ton per year, the major source threshold for HAP emissions. The source-wide individual HAP emissions are less than 10 tons per year. Because the source is not major for HAPs the limit in Condition D.1.1(a)(1)(iii) should be removed.

It should also be noted that the NIPSCO's Initial FESOP Permit No. 017-5541-00026 issued December 11, 1996, estimated emissions from the desulfurization system (flaring stacks (RC-30 #1 and #2) and dehydration reboiler vents (RC-39 #3, #4, and #5)) using a software program GRI-GLYCalc™ Version 3.0. The GLYCalc report did not account for the HAP or VOC pollution control provided by the thermal oxidizer (RC-57TO). Therefore, the operation of the thermal oxidizer (RC-57TO) is not necessary to render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-4.1 (Hazardous Air Pollutants) not applicable.

**Response to Comment 14:**

IDEM agrees that the HAP emissions from the dehydration reboiler vents were double counted. Prior to the correction, the source-wide potential to emit was greater than twenty-five (25) tons per year of a combination of HAPs.

OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Therefore, no changes have been made to the TSD. The Potential to Emit After Issuance table below lists the corrected HAP emission for the dehydration reboiler:

Process/emission unit	Potential To Emit (tons/year)						
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
<b>Natural Gas Combustion Only:</b>							
Reciprocating Engine Compressors and Emergency Generator (RC-9 & RC-10)	1.05	1.33	0.02	3.62	16.9	Less than 90.5 <sup>a</sup>	Combined 2.10 Formaldehyde 1.58
Flaring stacks (RC-30 #1, #2), Reboilers for Desulfurization (RC-40 RC-42), Reboilers for Dehydration (RC-36, RC-37, RC-38), and Thermal Oxidizer (RC-57TO)	0.10	0.39	0.03	11.0	4.28	5.10	Combined 4.70 <b>0.10</b>
Insignificant Boilers (RC-45, RC-51, RC-52)	0.06	0.24	0.02	0.17	2.66	3.16	Combined 0.06
<b>Treated Process Gas Combustion:</b>							
Flaring stacks (RC-30 #1, #2) and Reboilers for Dehydration (RC-36, RC-37, RC-38)	-	-	less than 94.8 <sup>b</sup>	21.4	-	-	Combined 9.20 Formaldehyde 0.00
<b>Total Emissions</b>	<b>1.20</b>	<b>1.96</b>	<b>less than 100</b>	<b>36.2</b>	<b>23.8</b>	<b>Less than 100</b>	<b>Combined 11.5 Formaldehyde 1.58</b>

The source-wide uncontrolled potential to emit individual HAPs emissions is less than 10 tons per year, total HAP emissions is less than 25 tons per year, and VOC emissions is less than 100 tons per year. Therefore, the HAP limits in Condition D.1.1(a)(1)(iii) and the compliance monitoring requirements in Condition D.1.6 and have been removed. Subsequent conditions have been renumbered.

**D.1.1 FESOP Limit [326 IAC 2-8] [326 IAC 2-4.1]**

The source shall limit ~~NO<sub>x</sub>, CO, and SO<sub>2</sub>~~ emissions **of each of the following pollutants** to less than one hundred (100) tons per twelve (12) consecutive month period: **NO<sub>x</sub>, CO, and SO<sub>2</sub>**. The source shall limit total HAPs to less than twenty five (25) tons per year.

- (a) The ~~NO<sub>x</sub>, and CO, and HAPs~~ limitations shall be achieved by the following limits:
- (1) The combined natural gas fuel usage for the compressor engines (RC-9 and RC-10) and the emergency generator (RC-2) shall be limited to less than 56 million cubic feet per twelve (12) consecutive month period. ~~The NO<sub>x</sub>, CO, and HAP emissions from the compressor engines and emergency generator shall be limited as follows:~~
    - (i) ~~NO<sub>x</sub> emissions shall not exceed, 3,233 lbs of NO<sub>x</sub> per Million Cubic Feet Natural Gas Burned.~~
    - (ii) ~~CO emissions shall not exceed 394 lbs of CO per Million Cubic Feet Natural Gas Burned.~~
    - (iii) ~~Total HAP emissions shall not exceed 75.1 lbs of HAP per Million Cubic Feet Natural Gas Burned.~~

...

#### D.1.6 Thermal Oxidizer Temperature

- (a) ~~A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall take appropriate response steps in accordance with Section C – Excursions and Exceedances whenever the 3-hour average temperature of the thermal oxidizer is below 1400°F. A 3-hour average temperature that is below 1400°F is not a deviation from this permit. Failure to take response steps in accordance with Section C – Excursions and Exceedances shall be considered a deviation from this permit.~~
- (b) ~~The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in condition D.1.1, as approved by IDEM.~~
- (c) ~~On and after the date the approved stack test results are available, the Permittee shall take appropriate response steps in accordance with Section C – Excursions and Exceedances whenever the 3-hour average temperature of the thermal oxidizer is below the 3-hour average temperature as observed during the compliant stack test. A 3-hour average temperature that is below the 3-hour average temperature as observed during the compliant stack test is not a deviation from this permit. Failure to take response steps in accordance with Section C – Excursions and Exceedances shall be considered a deviation from this permit.~~

#### Comment 15:

Mr. Ross believes the phrase "...shall be complete and sufficient..." in the second sentence of Condition D.1.8 (a) should be deleted because the phrase implies a subjective judgment. Also, in Condition D.1.8 (a) the last sentence includes a requirement that references records being maintained for "(3)". However, there is no "(3)"; therefore we recommend this sentence be deleted.

Mr. Ross recommends the phrase at end of Condition D.1.8(a)(1) and D.1.8(a)(2) be changed from "not taken" to "not recorded." The recommended changes are shown below:

#### D.1.8 Record Keeping Requirement

- (a) ~~To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken monthly and shall be complete and sufficient to establish compliance with the fuel and process gas usage limits established in Condition D.1.1. Records maintained for (3) shall be taken on the schedule as specified in (3) to establish compliance with the fuel and process gas usage limits established in Condition D.1.1(b)(1).~~
- (1) The natural gas fuel usage for the two compressor engines (RC-9 and RC-10), the emergency generator (RC-2), the desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38) and the thermal oxidizer (RC-57TO) or maintain a record of the reason why the fuel usage notations were ~~not taken~~ **not recorded**.
- (2) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) or maintain record of the reason why the notation of the quantity of process gas treated was ~~not taken~~ **not recorded**.

- (b) To document compliance with Condition D.1.7, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a flame when the desulfurization flaring stacks (RC-30 #1 and #2) are in operation.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**Response to Comment 15:**

The phrase "...shall be complete and sufficient..." has not been removed. The phrase appropriately characterizes the fuel usage records required to demonstrate compliance. IDEM agrees to the other recommendations made by Mr. Ross. The following change has been made to the permit as a result of this comment:

**D.1.8 Record Keeping Requirement**

- 
- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken monthly and shall be complete and sufficient to establish compliance with the fuel and process gas usage limits established in Condition D.1.1. ~~Records maintained for (3) shall be taken on the schedule as specified in (3) to establish compliance with the fuel and process gas usage limits established in Condition D.1.1(b)(1).~~
    - (1) The natural gas fuel usage for the two compressor engines (RC-9 and RC-10), the emergency generator (RC-2), the desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38) and the thermal oxidizer (RC-57TO) or maintain a record of the reason why the fuel usage notations were ~~not taken~~ **not recorded**.
    - (2) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) or maintain record of the reason why the notation of the quantity of process gas treated was ~~not taken~~ **not recorded**.

...

**Comment 16:**

The desulfurization component of the natural gas clean-up system and flare remove H<sub>2</sub>S and CO<sub>2</sub> from the natural gas being recovered from storage. The only criteria or hazardous air pollutants emitted by a burning flare is SO<sub>2</sub>; if no flame was present the SO<sub>2</sub> emissions would decrease and emissions of H<sub>2</sub>S and CO<sub>2</sub> would increase. Because H<sub>2</sub>S and CO<sub>2</sub> are neither criteria or hazardous air pollutants Condition D.1.7 is unnecessary, inappropriate and should be deleted. There is no regulation, statute, or other law that requires or authorizes IDEM to impose these requirements. This condition is unauthorized by law, arbitrary and capricious, and unreasonable. Operation of the flare is not required to comply with any of the limits in D.1.1.

**Response to Comment 16:**

Although CO<sub>2</sub> is not a regulated pollutant, H<sub>2</sub>S is a regulated pollutant under 326 IAC 2-7. The potential to emit H<sub>2</sub>S before the control device is 50.4 tons per year. Therefore, Condition D.1.7 has been removed and the Permittee is no required to monitor the presence of a flare flame. The following changes have been made to the permit as a result of this comment, condition numbers have been adjusted where appropriate:

**~~Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]~~**

**~~D.1.7 Flare Flame~~**

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~~In order to comply with Conditions D.1.1 the Permittee shall monitor the presence of a flare flame using a thermocouple or any other equivalent device to detect the presence of a flame when the desulfurization flaring stacks (RC-30 #1 and #2) are in operation.~~

...

**D.1.8D.1.6** Record Keeping Requirements

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- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken monthly and shall be complete and sufficient to establish compliance with the fuel and process gas usage limits established in Condition D.1.1. ~~Records maintained for (3) shall be taken on the schedule as specified in (3) to establish compliance with the fuel and process gas usage limits established in Condition D.1.1(b)(1).~~
- (1) The natural gas fuel usage for the two compressor engines (RC-9 and RC-10), the emergency generator (RC-2), the desulfurization flaring stacks (RC-30 #1 and #2), the reboilers for desulfurization (RC-40 and RC-42), the reboilers for dehydration (RC-36, RC-37, and RC-38) and the thermal oxidizer (RC-57TO) or maintain a record of the reason why the fuel usage notations were ~~not taken~~ **not recorded**.
- (2) The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) or maintain record of the reason why the notation of the quantity of process gas treated was ~~not taken~~ **not recorded**.
- (b) ~~To document compliance with Condition D.1.6, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a flame when the desulfurization flaring stacks (RC-30 #1 and #2) are in operation.~~
- (e) — All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**Comment 17:**

Mr. Ross requests the addition of a new Section D.3 to specifically address the remaining insignificant sources. The new Section should indicate the following: "There are no specific regulations applicable to these units that are not specifically regulated."

**Response to Comment 17:**

Although IDEM, OAQ previously included D sections in FESOPs for emission units that have no specific requirements, IDEM, OAQ discontinued this practice some time ago because IDEM believed it misrepresented the requirements for these units. All emission units are subject to some requirements under state regulations. For example, the opacity limitation in 326 IAC 5-1 is applicable to all emission units. Therefore, no change to the permit was made based on this comment.

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a Federally Enforceable State Operating Permit  
(FESOP) Renewal

**Source Background and Description**

Source Name:	NIPSCO - Royal Center
Source Location:	8710 North County Road 525 West, Royal Center, Indiana 46978
County:	Cass
SIC Code:	4922
Operation Permit No.:	F017-14192-00026
Operation Permit Issuance Date:	December 11, 2001
Permit Renewal No.:	F017-22972-00026
Permit Reviewer:	ERG/BL

The Office of Air Quality (OAQ) has reviewed a FESOP renewal application from Northern Indiana Public Service Company (NIPSCO), Royal Center relating to the operation of a natural gas processing plant.

**Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) natural gas-fired Dresser – Clark TLA-6 reciprocating engine compressors, identified as RC-9 and RC-10, constructed in 1964 and 1965, respectively, 2000 horsepower each, with a combined design heat input capacity of 30.8 MMBtu/hr. The two reciprocating engines exhaust through a stack.
- (b) Two (2) strippers with natural gas-fired desulfurizer flaring stacks, identified as RC-30 #1 and #2, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 9.6 MMBtu/hr (4.8 MMBtu/hr each).
- (c) Two (2) natural gas-fired reboilers for desulfurization, identified as RC-40 and RC-42, constructed in 1963 and 1965, respectively, with a combined design heat input capacity of 18 MMBtu/hr (9 MMBtu/hr each).
- (d) Three (3) dehydration reboiler process vents, identified as RC-39 #3, #4, and #5, constructed in 1966, with a combined design throughput of 180 million cubic feet per day (60 million cubic feet per day each). The dehydration reboiler process vents are part of the natural gas cleanup system. The vents from RC-39 #3 and RC-39 #4 are exhausted to a thermal oxidizer (RC-57TO). RC-39 #5 is a backup unit and is currently used for emergency system redundancy. The RC-39 #5 reboiler process vent is not exhausted through the thermal oxidizer RC-57TO.

**Unpermitted Emission Units and Pollution Control Equipment**

- (e) Thermal oxidizer, identified as RC-57TO, placed in service in January 2006, with a design heat input capacity of 2.455 MMBtu/hr. The thermal oxidizer is part of the natural gas cleanup system. Exhaust from the dehydration reboiler process vents RC-39 #3 and #4 is routed through the thermal oxidizer prior to exhaust to the atmosphere.

## Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Process vessel degreasing and cleaning to prepare for internal repairs. The unit in the shop building was installed before 1980. The unit in the compressor building was installed in 1996. [326 IAC 8-3]
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: [326 IAC 6-2-3]
  - (1) Three (3) natural gas-fired reboilers for dehydration, identified as RC-36, RC-37, and RC-38, all three (3) constructed in 1966, with a combined maximum capacity of 9 MMBtu/hr.
  - (2) Three (3) natural gas-fired boilers, identified as RC-45, RC-51, and RC-52, constructed in 1965, 1962, and 1965, with a combined maximum capacity of 2.17 MMBtu/hr.
  - (3) Various space heaters with a combined heat input capacity of 5.2 MMBtu/hr.
- (c) Stockpiled soils from soil remediation activities that are covered and waiting transportation for disposal. [326 IAC 6-4]
- (d) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs less than twelve thousand (12,000) gallons.
- (e) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (f) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than 6 MMBtu/hr.
- (g) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hr, except where total capacity of equipment operated by one stationary source exceeds 2 MMBtu/hr.
- (h) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume including: one (1) concrete tank, identified as RC-7, constructed in October 1983, consisting of an outer section and an inner section with a combined maximum capacity of 360,000 gallons, whose purpose is the clarification of process water prior to re-injection into underground storage facilities.
- (i) Heat exchanger cleaning and repair.
- (j) Purging of gas lines and vessels that is related to routing maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.
- (k) Blowdown for any of the following: sight glass, boiler, compressors, pumps, and cooling tower.
- (l) Emergency generators as follows:
  - (1) Gasoline generators not exceeding 110 horsepower;

- (2) Diesel generators not exceeding 1,600 horsepower; and
  - (3) Natural gas turbines or reciprocating engines not exceeding 16,000 horsepower.
  - (4) One (1) natural gas-fired emergency generator, a Waukesha Enginator, reciprocating engine, model L 7040 G, identified as RC-2, constructed in 1965, with design heat input capacity of 7 MMBtu/hr.
- (m) Purge double block and bleed valves.
  - (n) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.
  - (o) Emission units with single HAP emissions less than one (1) ton per year and combination HAPs emissions less than two and a half (2.5) tons per year.

### Existing Approvals

The source has been operating under the previous FESOP 017-14192-00026 issued on December 11, 2001, with an expiration date of December 11, 2006, and the following amendments:

- (a) AA 017-17446-00026 issued on July 2, 2003; and
- (b) AA 017-20823-00026 issued on March 18, 2005

The following terms and conditions from previous approvals have been revised in this FESOP permit:

- (a) The reboiler identified as RC-41 is no longer in service.

FESOP 017-14192-00026 issued 12/11/2001: Condition A.2(c) describes three (3) natural gas-fired reboilers for desulfurization, identified as RC-40, RC-41, and RC-42 with a combined maximum capacity of 27 MMBtu/hr. The limits for RC-41 have been deleted.

### Enforcement Issue

The facility should have submitted an AA application prior to the installation of the thermal oxidizer, identified as RC-57TO, installed in 2005. IDEM is aware of this violation and will take appropriate action.

### Recommendation

The staff recommends to the Commissioner that the FESOP renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete FESOP renewal application for the purposes of this review was received on March 13, 2006. Additional information was received on October 13, 2006.

There was no notice of completeness letter mailed to the source.

## Emission Calculations

See Appendix A of this document for detailed emission calculations.

Royal Center operates a triethylene glycol (TEG) natural gas dehydration unit. The Permittee has submitted an emission report generated by U.S. EPA Tanks 2.0 showing that the vapor pressure of ethylene glycol is such that glycol emissions from the dehydration unit are negligible.

## Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source, excluding the emission limits that were contained in the previous FESOP.

Pollutant	Unrestricted Potential Emissions (tons/yr)
PM	6.46
PM10	9.24
SO <sub>2</sub>	147
VOC	64.8
CO	112
NO <sub>x</sub>	545

HAPs	Unrestricted Potential Emissions (tons/yr)
Formaldehyde	9.14
Total HAPs	31.0

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of SO<sub>2</sub>, NO<sub>x</sub>, and CO pollutants are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its HAP emissions below the Title V levels.
- (c) Fugitive Emissions  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

## Potential to Emit After Issuance

The source has opted to remain a FESOP source. The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit. Since the source has not constructed any new emission units, the source's potential to emit is based on the emission units included in the original FESOP.

Process/emission unit	Potential To Emit (tons/year)						
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
<b>Natural Gas Combustion Only:</b>							
Reciprocating Engine Compressors and Emergency Generator (RC-9 & RC-10)	1.05	1.33	0.02	3.62	16.9	Less than 90.5 <sup>a</sup>	Combined 2.10 Formaldehyde 1.58
Flaring stacks (RC-30 #1, #2), Reboilers for Desulfurization (RC-40 RC-42), Reboilers for Dehydration (RC-36, RC-37, RC-38), and Thermal Oxidizer (RC-57TO)	0.10	0.39	0.03	11.0	4.28	5.10	Combined 4.70
Insignificant Boilers (RC-45, RC-51, RC-52)	0.06	0.24	0.02	0.17	2.66	3.16	Combined 0.06
<b>Treated Process Gas Combustion:</b>							
Flaring stacks (RC-30 #1, #2) and Reboilers for Dehydration (RC-36, RC-37, RC-38)	-	-	less than 94.8 <sup>b</sup>	21.4	-	-	Combined 9.20 Formaldehyde 0.00
<b>Total Emissions</b>	<b>1.20</b>	<b>1.96</b>	<b>less than 100</b>	<b>36.2</b>	<b>23.8</b>	<b>Less than 100</b>	<b>Combined 11.5 Formaldehyde 1.58</b>

a - Fuel usage shall be limited such that source-wide total emissions of NO<sub>x</sub> and CO, will be less than 100 tons/yr and total HAPs will be less than 25 tons/yr and render the requirements of 326 IAC 2-7 not applicable.  
 b - Fuel usage shall be limited such that source-wide total emissions of SO<sub>2</sub> will be less than 100 tons/yr and render the requirements of 326 IAC 2-7 not applicable.

### County Attainment Status

The source is located in Cass County.

Pollutant	Status
PM-10	Attainment
PM2.5	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

**Note:** On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

- (a) Cass County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions. See the State Rule Applicability - Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to ozone. Cass County has been designated as attainment or unclassifiable for the 8-hour ozone standard. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability - Entire Source section.
- (c) Cass County has been classified as attainment in Indiana for SO<sub>2</sub>, NO<sub>2</sub>, CO, Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of

Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability - Entire Source section.

### Source Status

Existing Source PSD, Part 70, or FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	1.20
PM-10	1.96
SO <sub>2</sub>	less than 100
VOC	25.5
CO	23.8
NO <sub>x</sub>	less than 100
Formaldehyde	1.58
Combination HAPs	11.5

This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this permit. The requirements of the NSPS 40 CFR 60.630 – 60.636, Subpart KKK, Standards of Performance for Equipment Leaks of VOC from On-Shore Natural Gas Processing Plants (326 IAC 12) are not included in this permit because this natural gas processing plant was constructed prior to January 20, 1984.
- (b) The requirements of the NSPS 40 CFR 60.40 - 60.46, Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced after August 17, 1971 (326 IAC 12) are not included in this permit because the maximum design input capacity of each boiler is less than 10 MMBtu/hr.
- (c) The requirements of the NSPS 40 CFR 60.40b - 60.49b, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12) are not included in this permit because the maximum design input capacity of each boiler is less than 100 MMBtu/hr.
- (d) The requirements of the NSPS 40 CFR 60.40b - 60.49b, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12) are not included in this permit because the maximum design input capacity of each boiler is less than 10 MMBtu/hr.
- (e) The requirements of the NSPS 40 CFR 60.640 – 60.648, Subpart LLL, Standards of Performance for Onshore Natural Gas Processing: SO<sub>2</sub> Emissions (326 IAC 12) are not included in this permit because the natural gas processing plant is all affected facilities at this source were constructed or modified prior to the applicability date of January 20, 1984.
- (f) The requirements of the NSPS 40 CFR 60.4200 - 60.4219, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (326 IAC 12) are not included in this permit because all internal combustion engines were ordered prior to the applicability date of July 11, 2005.

- (g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in this permit.
- (h) The requirements of the NESHAP 40 CFR 63.760 – 63.777, Subpart HH, National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities (326 IAC 20-31) are not included in this permit for the triethylene glycol (TEG) natural gas dehydration unit, because Subpart HH applies to natural gas exploration and production facilities. Pursuant to 40 CFR 63.760(a) emission units must be located at oil and natural gas production facilities.
- (i) The requirements of the NESHAP 40 CFR 63.1270 - 63.1287, Subpart HHH, National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities (326 IAC 20-31) are not included in this permit because this natural gas processing facility is owned and operated by a local utility. Pursuant to 40 CFR 63.1270(a), local distribution companies that receive gas from natural gas transmission pipelines are not subject to the requirements of this rule. This source is not a major source of HAPs.
- (j) The requirements of the NESHAP 40 CFR 63.6580 - 63.6675, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (326 IAC 20-31) are not included in this permit for the reciprocating engine compressors (TLA3 and TLA4). These generators are the existing stationary RICE, as defined by 40 CFR 63.6590. Pursuant to 40 CFR 63.6590(b)(3), there are no applicable requirements from 40 CFR 63, Subpart ZZZZ and 40 CFR 63, Subpart A for existing compression ignition (CI) stationary RICE. This source is not a major source of HAPs.
- (k) The requirements of the NESHAP 40 CFR 63.7480 - 63.7575, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (326 IAC 20-31) are not included in this permit.

On June 8th, the DC Court of Appeals vacated the National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD). Since NESHAP 40 CFR Part 63, Subpart DDDDD has been vacated, pursuant to Section 112(j) of the Clean Air Act, major sources of Hazardous Air Pollutants (HAPs), in specified source categories, require a case-by-case MACT determination when EPA fails to promulgate a scheduled MACT Standard by the regulatory deadline. However, this source is not a major source of Hazardous Air Pollutants (HAPs).

### **State Rule Applicability – Entire Source**

#### **326 IAC 2-2 (PSD)**

The source was first constructed in 1963, prior to PSD applicability. Therefore, no PSD review occurred at the original construction. This existing source is not in 1 of 28 source categories defined in 326 IAC 2-2-1(gg) and has the potential to emit NOx before control greater than 250 tons per year. The source's original FESOP 017-5541-00026 issued on December 11, 1996 required production limits to limit the amount of NOx under Title V threshold levels. The source is a minor source under 326 IAC 2-2 and the requirements of 326 IAC 2-7 (Part 70 Program) are not applicable.

#### **326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**

This plant has the potential to emit greater than twenty-five (25) tons per year of a combination of HAPs. However, the source accepted limits such that the emissions will be limited to less than twenty-five (25) tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply. For the specific limit, please see the FESOP limitations discussed below.

### 326 IAC 2-6 (Emission Reporting)

This source is located in Cass County, is not required to operate under a Part 70 permit, and has potential lead emissions that are less than five (5) tons per year. Therefore, this source is subject only to the provisions of 326 IAC 2-6-5 (Additional Information Requests).

### 326 IAC 2-8 (FESOP)

Pursuant to 017-14192-00026, issued on December 11, 2001, the Permittee has agreed to comply with the following FESOP limits:

(a) This source shall limit NO<sub>x</sub> and CO emissions to less than one hundred (100) tons per twelve (12) consecutive month period. The source shall limit total HAPs to less than twenty-five (25) tons per year. These limitations shall be achieved by the following limits:

(1) The combined natural gas fuel usage for the emergency generator (RC-2) and the two compressor engines (RC-9 and RC-10) shall be limited to less than 56 million cubic feet per twelve (12) consecutive month period. This natural gas fuel usage limitation is necessary to limit NO<sub>x</sub> emissions to less than 90.9 tons per twelve (12) consecutive month period and the combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period.

(i) NO<sub>x</sub> emissions shall not exceed 3,233 lbs of NO<sub>x</sub> per Million Cubic Feet Natural Gas Burned.

(ii) CO emissions shall not exceed 394 lbs of CO per Million Cubic Feet Natural Gas Burned.

(iii) Total HAP emissions shall not exceed 75.1 lbs of HAP per Million Cubic Feet Natural Gas Burned.

The allowable emission rate for these units (RC-9, RC-10, RC-2) was calculated using uncontrolled emission factors, from AP-42 Chapter 3.2 Natural Gas-fired Reciprocating Engines (August 2000 edition).

(2) The combined natural gas fuel usage for the desulfurization flaring stacks (#1 and #2), the two (2) reboilers for desulfurization (RC-40 and RC-42), the three (3) reboilers for dehydration (RC-36, RC-37, and RC-38) the thermal oxidizer (RC-57TO) shall be limited to 102 million cubic feet per twelve (12) consecutive month period. This natural gas fuel usage is necessary to limit NO<sub>x</sub> emissions to less than 5.1 tons per twelve (12) consecutive month period. NO<sub>x</sub> emissions shall not exceed 100 lbs of NO<sub>x</sub> per Million Cubic Feet Natural Gas Burned. CO emissions shall not exceed 84 lbs of CO per Million Cubic Feet Natural Gas Burned

The allowable emission rate for these units (stack #1, stack #2, RC-40, RC-42, RC-36, RC-37, RC-38, and RC-57TO) was calculated using uncontrolled emission factors, from AP-42 Chapter 1.4 Natural Gas Combustion (July 1998 edition).

These limits are structured such that when including the emissions from RC-45, RC-51, and RC-52, the source total emissions of NO<sub>x</sub> and CO are less than one hundred (100) tons per twelve (12) consecutive month period.

(b) The source shall limit SO<sub>2</sub> emissions to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall be achieved by limiting the amount of process gas treated through the desulfurization system utilizing flaring stacks (#1 and #2) to less than 28,230 million cubic feet per twelve (12) consecutive month period. SO<sub>2</sub> emissions shall not exceed 6.72 lb/MMCF. These limits will render the requirements of 326 IAC 2-7 (Part 70 Permit Program) not applicable.

Compliance shall be determined using the following equation, where the H<sub>2</sub>S concentration of the gas entering the flaring stacks is tested once every five years:

$$\text{SO}_2 \text{ emissions (lb/MMCF)} = 1,685 \times S$$

Where, S = the H<sub>2</sub>S content of the gas (mole %)  
1 mole % H<sub>2</sub>S = 627 grains H<sub>2</sub>S / 100 standard cubic feet

The equation is from AP-42 Chapter 5.3 - Natural Gas Processing (January 1995 edition). The permittee shall conduct testing at least once every five (5) years during the natural gas withdrawal season from a representative sample location characteristic of the entire field gas.

#### 326 IAC 10-1 (Nitrogen Oxides Rules)

This source is not in Clark or Floyd County, the source is in Cass County. Therefore 326 IAC 10-1 does not apply. This source was not identified as an applicable source category. Therefore, 326 IAC 10-3 does not apply. This source does not have a large NO<sub>x</sub> SIP call engine. Therefore, 326 IAC 10-4 does not apply.

#### State Rule Applicability – Boilers

#### 326 IAC 6-2-3 (Particulate Emission Limitations for Source of Indirect Heating)

This source is subject to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating) because these sources of indirect heating (RC-36, RC-37, RC-38, RC-40, RC-42, RC-45, RC-51, and RC-52) were constructed before (1966, 1966, 1966, 1963, 1965, 1965, 1962, and 1965 respectively) the applicability date of September 21, 1983 for Section 4 of this rule. Therefore Section 3 is applicable. Pursuant to 326 IAC 6-2-3(b), the particulate limit shall be calculated for all facilities in operation on June 8, 1972. Pursuant to 326 IAC 6-2-3(d), the particulate limit shall be lesser of 0.8 lb/MMBtu and value using the equation below:

$$Pt = (C \times a \times h) / (76.5 \times Q^{0.75} \times N^{0.25})$$

Where C = 50 u/m<sup>3</sup>

Pt = pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)

Q = total source maximum operating capacity rating (MMBtu/hr)

N = number of stacks

a = plume rise factor (0.67)

h = stack height (ft)

$$PT = (50 \times 0.67 \times 42.0) / (76.5 \times 29.2^{0.75} \times 8^{0.25}) = 0.87 \text{ lb/MMBtu}$$

The particulate limit using the equation above results in a value greater than 0.8 lb/MMBtu. Therefore, the particulate limit shall be 0.8 lb/MMBtu.

Year	Unit	Total Source Max. Operating Capacity in the Year Installed, Q (MMBtu/hr)	Weighted Average Stack Height (ft)	Number of Stacks	Pounds of PM emitted, Pt (lb/MMBtu)	Emission Limit for All Units (lb/MMBtu)
1962	RC-51	0.91	30.2	1	-	0.80
1963	RC-40	9.0	50.4	1	-	0.80
1965	RC-42	9.0	50.4	1	-	0.80
1965	RC-45, RC-52	0.35 + 0.91 = 1.26	15.2	2	-	0.80
1966	RC-36, RC-37, RC-38	3 + 3 + 3 = 9	30	3	-	0.80
Total		29.2	42.0	8	0.87	0.80

### State Rule Applicability – Insignificant Activities

#### 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The stockpiled soils from soil remediation activities are not subject to 326 IAC 6-3-2(e) since there are no process related particulate matter emissions. Therefore, 326 IAC 6-3 does not apply.

#### 326 IAC 6-4 (Fugitive Dust Emissions)

The source is subject to 326 IAC 6-4 (Fugitive Dust Emissions) because the source maintains stockpiled soils from soil remediation activities. The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

#### 326 IAC 8-3-2 (Cold Cleaner Operations)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

- (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
  - (B) The solvent is agitated; or
  - (C) The solvent is heated.
- (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
- (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
- (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
- (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
  - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
  - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
  - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
  - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

### Testing Requirements

H<sub>2</sub>S testing is required for at the the desulfurization system utilizing flaring stacks (RC-30 #1 and #2). The amount of process gas treated through the desulfurization system utilizing flaring stacks (RC-30 #1 and #2) is limited. The usage limit is required to limit the potential to emit of SO<sub>2</sub> to less than 100 tons per 12 consecutive month period. Compliance shall be determined using the emission factor, provided by AP-42 Chapter 5.3 where the H<sub>2</sub>S concentration of the gas entering the flaring stacks is a required. The Permittee shall conduct testing at least once every five (5) years during the natural gas withdrawal season from a representative sample location characteristic of the entire field gas for appropriate use in the AP-42 emission factor formula.

Reciprocating engine compressors (identified as TLA4 and TLA3) and the emergency generator (RC-2) are the primary source of of the NO<sub>x</sub> emissions. The emissions for these units were calculated using AP-42 emission factors. Since these emission factors are considered reliable, IDEM has not required stack testing for these two units.

### Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

Control	Parameter	Frequency	Range	Excursions and Exceedances
Thermal oxidizer (RC-57TO)	Oxidizer Temperature	3-hour average	Normal-Abnormal (Above 1400°F)	Response Steps
Desulfurization flaring stacks	Presence of Flame	Continuously when flares are operational	Not applicable	Response Steps

These monitoring conditions are necessary because the thermal oxidizer (RC-57TO) and desulfurization flaring stacks for the dehydration reboiler process vents (RC-39 #3, #4, and #5) and strippers (RC-30 #1 and #2) must operate properly to ensure compliance with 326 IAC 2-8 (FESOP).

## **Conclusion**

The operation of this natural gas processing plant shall be subject to the conditions of the FESOP 017-22972-00026.

**Appendix A: Emission Calculations  
Emissions Summary**

**Company Name:** NIPSCO - Royal Center  
**Address City IN Zip:** 8710 North County Road 525 West, Royal Center, Indiana 46978  
**FESOP Renewal:** F017-22972-00026  
**Reviewer:** ERG/BL  
**Date:** September 3, 2007

	<b>Potential To Emit (tons/year)</b>								
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NOx	HAPs	Formaldehyde	Hexane
Natural Gas Combustion Only: Reciprocating Engine Compressors and Emergency Generator (RC-9 & RC-10)	6.08	7.73	0.10	20.9	95.4	525	12.2	9.14	-
Flaring Stacks (RC-30 #1, #2), Reboilers for Desulfurization (RC-40, RC42), Reboilers for Dehydration (RC-36, RC-37, RC-38), and Thermal Oxidizer (RC-57TO)	0.32	1.27	0.10	22.3	14.1	16.8	9.52	-	0.76
Insignificant Boilers (RC-45, RC-51, RC-52)	0.06	0.24	0.02	0.17	2.66	3.16	0.06	-	0.06
Treated Process Gas: Flaring stacks (RC-30 #1, #2) and Reboilers for Dehydration (RC-36, RC-37, RC-38)	0.00	0.00	147	21.4	0.00	0.0	9.20	-	-
<b>Total</b>	<b>6.46</b>	<b>9.24</b>	<b>147</b>	<b>64.8</b>	<b>112</b>	<b>545</b>	<b>31.0</b>	<b>9.14</b>	<b>0.82</b>

	<b>Potential to Emit After Issuance (tons/year)</b>								
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NOx	HAPs	Formaldehyde	Hexane
Natural Gas Combustion Only: Reciprocating Engine Compressors and Emergency Generator (RC-9 & RC-10) <sup>a</sup>	1.05	1.33	0.02	3.62	16.9	less than 90.5	2.10	1.58	-
Flaring Stacks (#1, #2), Reboilers for Desulfurization (RC-40, RC42), Reboilers for Dehydration (RC-36, RC-37, RC-38), and Thermal Oxidizer (RC-57TO)	0.10	0.39	0.03	11.0	4.28	5.10	4.70	-	0.32
Insignificant Boilers (RC-45, RC-51, RC-52)	0.06	0.24	0.02	0.17	2.66	3.16	0.06	-	0.06
Treated Process Gas Combustion: Flaring stacks (#1, #2) and Reboilers for Dehydration (RC-36, RC-37, RC-38) <sup>b</sup>	0	0	94.8	21.4	0	0	9.20	-	-
<b>Total</b>	<b>1.20</b>	<b>1.96</b>	<b>94.9</b>	<b>36.2</b>	<b>23.8</b>	<b>less than 98.8</b>	<b>16.1</b>	<b>1.58</b>	<b>0.38</b>

a - Fuel usage shall be limited such that source-wide total emissions of NOx will be less than 100 tons/yr and render the requirements of 326 IAC 2-7 not applicable.

b - Fuel usage shall be limited such that source-wide total emissions of SO<sub>2</sub> will be less than 100 tons/yr and render the requirements of 326 IAC 2-7 not applicable.

**Appendix A: Emission Calculations  
Natural Gas Combustion Only  
Reciprocating Engine Compressors (RC-9 & RC-10) and Emergency Generator (RC-2)**

**Company Name:** NIPSCO - Royal Center  
**Address:** 8710 North County Road 525 West, Royal Center, Indiana 46978  
**FESOP Renewal:** F017-22972-00026  
**Reviewer:** ERG/BL  
**Date:** September 3, 2007

Heat Input Capacity (MMBtu/hr)  
37.8

Potential Throughput (MMSCF/yr)  
325

Emission Factor (lb/MMSCF)	Pollutant					
	PM*	PM10*	SO <sub>2</sub>	NOx**	VOC	CO***
Potential to Emit (tons/yr)	39.2	49.3	0.6	3,233	122.4	393.7
	6.08	7.73	0.10	525	20.9	95.4

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM combined.

\*\*NOx factor overly conservative due to use of 2-lean factor for both sources; Waukesha generator (RC-2) is actually 4-rich which has lower NOx emission rate

\*\*\*CO estimate includes use of 4-rich factor for generator usage to ensure non-applicability to 326 IAC 2-7

*Emission factors are from AP-42 Table 3.2-1 (7/00)*

MMBtu = 1,000,000 Btu

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF)/2,000 lb/ton

**Appendix A: Emission Calculations  
 Natural Gas Combustion Only  
 Reciprocating Engine Compressors (RC-9 & RC-10) and Emergency Generator (RC-2)  
 HAPs Emissions**

**Company Name:** NIPSCO - Royal Center  
**Address:** 8710 North County Road 525 West, Royal Center, Indiana 46978  
**FESOP Renewal:** F017-22972-00026  
**Reviewer:** ERG/BL  
**Date:** September 3, 2007

HAPs - Organics

	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Toluene
Emission Factor (lb/MMSCF)	7.92E+00	7.94E+00	1.98E+00	5.63E+01	9.82E-01
Potential to Emit (tons/yr)	1.28E+00	1.29E+00	3.21E-01	9.14E+00	1.59E-01

Methodology is the same as page 2.

The five highest organic emission factors are provided above.  
 Organics were derived from AP-42 Table 3-2.1 (7/00)

**Appendix A: Emission Calculations, Limited Potential  
Natural Gas Combustion Only  
Reciprocating Engine Compressors (RC-9 & RC-10) and Emergency Generator (RC-2)**

**Company Name:** NIPSCO - Royal Center  
**Address:** 8710 North County Road 525 West, Royal Center, Indiana 46978  
**FESOP Renewal:** F017-22972-00026  
**Reviewer:** ERG/BL  
**Date:** September 3, 2007

Limited Throughput (MMSCF/yr)  
56

	Pollutant					
Emission Factor (lb/MMSCF)	PM*	PM10*	SO <sub>2</sub>	NOx**	VOC	CO***
Potential to Emit (tons/yr)	39.2	49.3	0.6	3,233	122.4	393.7
	1.0	1.3	0.02	90.5	3.6	16.9

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM combined.

\*\*NOx factor overly conservative due to use of 2-lean factor for both sources; Waukesha generator (RC-2) is actually 4-rich which has lower NOx emission rate

\*\*\*CO estimate includes use of 4-rich factor for generator usage to ensure non-applicability to 326 IAC 2-7

Emission factors are from AP-42 Table 3.2-1 (7/00)

All emission factors are based on normal firing.

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF)/2,000 lb/ton

**Appendix A: Emission Calculations, Limited Potential  
Natural Gas Combustion Only  
Reciprocating Engine Compressors (RC-9 & RC-10) and Emergency Generator (RC-2)  
HAPs Emissions**

**Company Name:** NIPSCO - Royal Center  
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**Date:** September 3, 2007

HAPs - Organics

	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Toluene	Total HAP
Emission Factor (lb/MMSCF)	7.92E+00	7.94E+00	1.98E+00	5.63E+01	9.82E-01	7.51E+01
Potential to Emit (tons/yr)	2.22E-01	2.22E-01	5.54E-02	1.58E+00	2.75E-02	2.10E+00

Methodology is the same as page 4.

The five highest organic emission factors are provided above.  
 Organics were derived from AP-42 Table 3-2.1 (7/00)

**Appendix A: Emission Calculations**

**Natural Gas Combustion Only**

**MM BTU/HR <100**

**Flaring stacks (RC-30 #1 and #2), Reboilers for Desulfurization (RC-40 and RC-42),  
Reboilers for Dehydration (RC-36, RC-37, and RC-38), and Thermal Oxidizer (RC-57TO)**

<b>Emission Unit</b>	<b>Heat Input Capacity (MMBtu/hr)</b>
<i>RC30 #1 &amp; #2</i>	<i>9.60</i>
<i>RC36-38</i>	<i>9.00</i>
<i>RC40</i>	<i>9.00</i>
<i>RC42</i>	<i>9.00</i>
<i>RC57TO</i>	<i>2.46</i>

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Heat Input Capacity  
MMBtu/hr  
39.1

Potential Throughput  
MMSCF/yr  
335

Emission Factor (lb/MMSCF)	Pollutant					
	PM*	PM10*	SO <sub>2</sub>	NOx	VOC	CO
	1.90	7.60	0.60	100	5.50	84.0
Potential to Emit (tons/yr)	0.32	1.27	0.10	16.8	0.92	14.1

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM combined.

\*\*Emission factors for NOx (Uncontrolled) = 100 lb/MMSCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).  
All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF)/2,000 lb/ton

**Appendix A: Emission Calculations**

**Natural Gas Combustion Only**

**MM BTU/HR <100**

**Flaring stacks (RC-30 #1 and #2), Reboilers for Desulfurization (RC-40 and RC-42),  
Reboilers for Dehydration (RC-36, RC-37, and RC-38), and Thermal Oxidizer (RC-57TO)  
HAPs Emissions**

**Company Name:** NIPSCO - Royal Center  
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HAPs - Organics

Emission Factor (lb/MMSCF)	Benzene 2.10E-03	Dichlorobenzene 1.20E-03	Formaldehyde 7.50E-02	Hexane 1.80E+00	Toluene 3.40E-03
Potential to Emit (tons/yr)	3.52E-04	2.01E-04	1.26E-02	3.02E-01	5.70E-04

<i>GRI Gly-Calc</i> Emission Factor (lb/Hr)	Benzene 4.76E-01	Toluene 7.61E-01	Ethylbenzene 1.05E-01	Xylene 6.45E-01	Hexane 1.06E-01	Total HAPs 2.10E+00	Total VOCs 4.89E+00
<i>GRI Gly-Calc</i> Potential to Emit (tons/yr)	2.087E+00	3.33E+00	4.60E-01	2.83E+00	4.63E-01	9.20E+00	2.14E+01

HAPs - Metals

Emission Factor (lb/MMSCF)	Lead 5.00E-04	Cadmium 1.10E-03	Chromium 1.40E-03	Manganese 3.80E-04	Nickel 2.10E-03
Potential to Emit (tons/yr)	8.39E-05	1.84E-04	2.35E-04	6.37E-05	3.52E-04

Methodology is the same as page 6.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations, Limited Potential**

**Natural Gas Combustion Only**

**MM BTU/HR <100**

**Flaring stacks (#1 and #2), Reboilers for Desulfurization (RC-40 and RC-42),  
Reboilers for Dehydration (RC-36, RC-37, and RC-38), and Thermal Oxidizer (RC-57TO)**

**Company Name:** NIPSCO - Royal Center

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**Date:** September 3, 2007

Limited Throughput (MMSCF/yr)

**102**

	Pollutant					
	PM*	PM10*	SO <sub>2</sub>	NOx	VOC	CO
Emission Factor (lb/MMSCF)	1.90	7.60	0.60	100	5.50	84
Potential to Emit (tons/yr)	0.10	0.39	0.03	5.10	0.28	4.28

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM combined.

\*\*Emission factors for NOx (Uncontrolled) = 100 lb/MMSCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July 1998).

All emission factors are based on normal firing.

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF)/2,000 lb/ton

**Appendix A: Emission Calculations, Limited Potential**

**Natural Gas Combustion Only**

**MM BTU/HR <100**

**Flaring stacks (#1 and #2), Reboilers for Desulfurization (RC-40 and RC-42),  
Reboilers for Dehydration (RC-36, RC-37, and RC-38), and Thermal Oxidizer (RC-57TO)  
HAPs Emissions**

**Company Name:** NIPSCO - Royal Center

**Address:** 8710 North County Road 525 West, Royal Center, Indiana 46978

**FESOP Renewal:** F017-22972-00026

**Reviewer:** ERG/BL

**Date:** September 3, 2007

HAPs - Organics

Emission Factor (lb/MMSCF)	Benzene 2.10E-03	Dichlorobenzene 1.20E-03	Formaldehyde 7.50E-02	Hexane 1.80E+00	Toluene 3.40E-03
Potential to Emit (tons/yr)	1.07E-04	6.12E-05	3.83E-03	9.18E-02	1.73E-04

<i>GRI Gly-Calc</i> Emission Factor (lb/Hr)	Benzene 4.76E-01	Toluene 7.61E-01	Ethylbenzene 1.05E-01	Xylene 6.45E-01	Hexane 1.06E-01	Total HAPs 2.10E+00	Total VOCs 4.89E+00
<i>GRI Gly-Calc</i> Potential to Emit (tons/yr)	1.04E+00	1.67E+00	2.30E-01	1.41E+00	2.31E-01	4.60E+00	1.07E+01

HAPs - Metals

Emission Factor (lb/MMSCF)	Lead 5.00E-04	Cadmium 1.10E-03	Chromium 1.40E-03	Manganese 3.80E-04	Nickel 2.10E-03
Potential to Emit (tons/yr)	2.55E-05	5.61E-05	7.14E-05	1.94E-05	1.07E-04

Methodology is the same as page 8.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Insignificant Boilers (RC-45, RC-51, and RC-52) and Space Heaters**

**Company Name:** NIPSCO - Royal Center  
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**FESOP Renewal:** F017-22972-00026  
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Heat Input Capacity  
MMBtu/hr  
7.37

Potential Throughput  
MMSCF/yr  
63.3

Pollutant

	PM*	PM10*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO
Emission Factor (lb/MMSCF)	1.90	7.60	0.60	100	5.50	84.0
Potential to Emit (tons/yr)	0.06	0.24	0.02	3.16	0.17	2.66

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission factors for NO<sub>x</sub> (Uncontrolled) = 100 lb/MMSCF

Emission factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July 1998).

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMSCF = 1,000,000 Standard Cubic Feet of Gas

**Methodology**

Potential Throughput (MMSCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMSCF/1,020 MMBtu

Potential to Emit (tons/yr) = Potential Throughput (MMSCF/yr) x Emission Factor (lb/MMSCF)/2,000 lb/ton

**Appendix A: Emission Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Insignificant Boilers (RC-45, RC-51, and RC-52) and Space Heaters**  
**HAPs Emissions**

**Company Name:** NIPSCO - Royal Center  
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HAPs - Organics

Emission Factor (lb/MMSCF)	Benzene 2.10E-03	Dichlorobenzene 1.20E-03	Formaldehyde 7.50E-02	Hexane 1.80E+00	Toluene 3.40E-03
Potential to Emit (tons/yr)	6.65E-05	3.80E-05	2.37E-03	5.70E-02	1.08E-04

HAPs - Metals

Emission Factor (lb/MMSCF)	Lead 5.00E-04	Cadmium 1.10E-03	Chromium 1.40E-03	Manganese 3.80E-04	Nickel 2.10E-03
Potential to Emit (tons/yr)	1.58E-05	3.48E-05	4.43E-05	1.20E-05	6.65E-05

Methodology is the same as page 10.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4 (July, 1998).  
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations**  
**Desulfurization System: Flaring stacks (RC-30 #1 and #2) and Dehydration Reboiler Vents (RC-39 #3, #4, and #5)**  
**Desulfurization System Process Gas**

**Company Name:** NIPSCO - Royal Center  
**Address:** 8710 North County Road 525 West, Royal Center, Indiana 46978  
**FESOP Renewal:** F017-22972-00026  
**Reviewer:** ERG/BL  
**Date:** September 3, 2007

**Potential to Emit (tons/yr)**

	PM	PM10	SO <sub>2</sub> *	NOx	VOC	CO	HAPs	Formaldehyde
Flare #1	-	-	73.6	-	-	-	-	-
Flare #2	-	-	73.6	-	-	-	-	-
Dehydration Reboiler Vents **	0	0	0	0	21.4	0	9.20	-
<b>Total</b>	<b>0</b>	<b>0</b>	<b>147</b>	<b>0</b>	<b>21.4</b>	<b>0</b>	<b>9.20</b>	<b>-</b>

**Limited, Potential to Emit (tons/yr)\*\*\***

	PM	PM10	SO <sub>2</sub>	NOx	VOC	CO	HAPs	Formaldehyde
Flaring stacks #1 and #2	-	-	94.8	-	-	-	-	-
Dehydration Reboiler Vents **	0	0	0	0	21.4	0	9.20	-

**Methodology, Potential to Emit****Sulfur Dioxide**

Desulfurization System Maximum Throughput = 120 Million Cubic Feet per day

\* Emission factors from AP 42, Chapter 5.3 - Natural Gas Processing, Table 5.3.1. (Supplement A, January 1995)

SO<sub>2</sub> emissions calculated based historical H<sub>2</sub>S sampling data provided by the Permittee. Hydrogen sulfide (H<sub>2</sub>S) concentrations measured in process gas at 2.5 grains/100 standard cubic feet (annual emissions of H<sub>2</sub>S are less than 0.1 ton per year). IDEM assumes that 100% of the H<sub>2</sub>S in the acid gas stream is converted to SO<sub>2</sub> during flaring.

SO<sub>2</sub> Potential to Emit (lbs/day) = H<sub>2</sub>S Conc. (2.5 gr H<sub>2</sub>S/100 SCF) x Conversion (627 gr H<sub>2</sub>S/100 SCF / 1 H<sub>2</sub>S mole %) x Emission Factor (1,685 lb/MMCF) x Max. throughput (120 MMSCF/day)

SO<sub>2</sub> Potential to Emit (tons/day) = SO<sub>2</sub> Potential to Emit (lbs/day) x (1 day/24 hr) x (8,760 hr/1 yr) x (1 ton/2,000 lb)

**Volatile Organic Compound**

\*\* Emissions for the dehydration reboilers from GRI-GLYCalc™ Version 3.0. A software program for estimating air emissions from glycol units. Results originally presented in FESOP 017-5541-00026 TSD issued December 11, 1996. The Permittee provided an update of the GRI-GLYCalc™ data using Version 4.0; see page 13 and 14.

GRI-GLYCalc™ emissions for VOC and total HAPs have been adjusted from 4,380 hours per year to 8,760 to represent worst case emissions.

**Methodology - Limited, Potential to Emit**

\*\*\*Process gas treated through the desulfurization system shall be limited to less than 28,230 million cubic feet per twelve (12) consecutive month period. The source shall limit SO<sub>2</sub> emissions to less than one hundred (100) tons per twelve (12) consecutive month period.

**Appendix A: Emission Calculations  
Updated GRI-GLYCalc™, Version 4.0  
Potential Emissions Detail**

Station: **Royal Center CS**  
 County: **Cass** State: **IN**  
 Emissions Point: **RC-39 #3, #4, and #5**  
 Unit Name: **TEG Dehy Glycol Re-Boilers** Agency ID: **RC-36, RC-37 and RC-38**  
 Manufacture: **N/A** Rating: **9 MMBtu/hr**

Unit Potential Production Basis for Hours		
Parameter	Stream	Value
Heat Input	Natural Gas - MMBTU/hr	9
Operating Hours	One Hour	1

Unit Potential Production Basis for Hours		
Parameter	Stream	Value
Heat Input	Natural Gas - MMBTU/hr	9
Operating Hours	One Year Continuous Operation	4380

Chemical	Potential Emissions in Lb./Hour		
	Lb/MMbtu	Emissions Factor Reference	Lb.
Carbon Monoxide	8.235E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>0.741</b>
Nitrogen Oxides (NOx)	9.804E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>0.882</b>
PM	1.863E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.017</b>
PM <sub>10</sub>	7.451E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.067</b>
Sulfur Dioxide	5.710E-02	Eng. Calc (20gr S/100 scf)	<b>0.514</b>
VOC	5.392E-03	AP-42, Table 1.4-2, 7/98	<b>0.049</b>

Lb/Mmbtu	Potential Emissions in Tons/Year	
	Emissions Factor Reference	TPY
8.235E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>1.62</b>
9.804E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>1.93</b>
1.863E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.037</b>
7.451E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.147</b>
7.140E-04	Eng. Calc (0.25gr S/100 scf)	<b>0.014</b>
5.399E-03	AP-42, Table 1.4-2, 7/98	<b>0.11</b>

Emissions Point: **RC-57TO**  
 Unit Name: **TEG Dehy Thermal Oxidizer** Agency ID: **RC-36, RC-37 and RC-38**  
 Manufacture: **N/A** Rating: **2.455 MMBtu/hr**

Unit Potential Production Basis for Hours		
Parameter	Stream	Value
Heat Input	Natural Gas - MMBTU/hr	2.455
Operating Hours	One Hour	1

Unit Potential Production Basis for Hours		
Parameter	Stream	Value
Heat Input	Natural Gas - MMBTU/hr	2.455
Operating Hours	One Year Continuous Operation	4380

Chemical	Potential Emissions in Lb./Hour		
	Lb/MMbtu	Emissions Factor Reference	Lb.
Carbon Monoxide	8.235E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>0.202</b>
Nitrogen Oxides (NOx)	9.804E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>0.241</b>
PM	1.863E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.005</b>
PM <sub>10</sub>	7.451E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.018</b>
Sulfur Dioxide	5.710E-02	Eng. Calc (20gr S/100 scf)	<b>0.140</b>
VOC	5.392E-03	AP-42, Table 1.4-2, 7/98	<b>0.013</b>

Lb/Mmbtu	Potential Emissions in Tons/Year	
	Emissions Factor Reference	TPY
8.235E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>0.44</b>
9.804E-02	AP-42 Table 1.4-1, Small Boilers, Uncontrolled (7/98)	<b>0.53</b>
1.863E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.010</b>
7.451E-03	AP-42, Table 1.4-2, PM (Filt), 7/98	<b>0.040</b>
7.140E-04	Eng. Calc (0.25gr S/100 scf)	<b>0.004</b>
5.399E-03	AP-42, Table 1.4-2, 7/98	<b>0.03</b>

Unit Name: **TEGDEHY1-TEGDEHY2** Agency ID: **RC-39 (#3 & #4 or #5)**  
 Control: **N/A**  
 Manufacture: **N/A** Unit Rating: **120 MMscf/day** Emission Pt: **RC-57TO**

Unit Potential Production Basis for Hours		
Parameter	Stream	Value
Operating Hours	One Hour	1

Unit Potential Production Basis for Hours		
Parameter	Stream	Value
Operating Hours	One Year Continuous Operation	4380

Chemical	Potential Emissions in Lb./Hour		
	Lb/hr/unit	Emissions Factor Reference	Lb/hr
Benzene	2.382E-01	GRI Gly-CALC Ver 4	<b>0.476</b>
n-Hexane	5.280E-02	GRI Gly-CALC Ver 4	<b>0.106</b>
Toluene	3.807E-01	GRI Gly-CALC Ver 4	<b>0.761</b>
Ethylbenzene	5.250E-02	GRI Gly-CALC Ver 4	<b>0.105</b>
Xylene	3.227E-01	GRI Gly-CALC Ver 4	<b>0.645</b>
HAPs	1.051E+00	GRI Gly-CALC Ver 4	<b>2.101</b>
VOC	2.445E+00	GRI Gly-CALC Ver 4	<b>4.890</b>

Lb/hr/unit	Potential Emissions in Tons/Year	
	Emissions Factor Reference	TPY
2.382E-01	GRI Gly-CALC Ver 4	<b>1.04</b>
5.280E-02	GRI Gly-CALC Ver 4	<b>0.23</b>
3.807E-01	GRI Gly-CALC Ver 4	<b>1.67</b>
5.250E-02	GRI Gly-CALC Ver 4	<b>0.23</b>
3.227E-01	GRI Gly-CALC Ver 4	<b>1.41</b>
1.051E+00	GRI Gly-CALC Ver 4	<b>4.60</b>
2.445E+00	GRI Gly-CALC Ver 4	<b>10.71</b>

DEHY TOTAL (TPY)	
Carbon Monoxide	2.07
Formaldehyde	0.003
Nitrogen Oxides (NOx)	2.46
PM	0.05
PM10	0.19
Sulfur Dioxide	0.02
VOC	10.84
Benzene	1.04
n-Hexane	0.30
Toluene	1.67
Ethylbenzene	0.23
Xylene	1.41
HAPs	4.67



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GAS/VAPOR FRACTIONAL ANALYSIS

<b>SAMPLE ID</b>	<b>COMPONENT</b>	<b>MOL %</b>	<b>GRAM</b>
Customer..... NIPSCO	Nitrogen N2	1.287	0.141
Station No..... N/A	Carbon D. CO2	0.769	0.131
Operator..... NIPSCO	Hyd. Sulf. H2S	-----	-----
Lease..... N/A	Oxygen O2	-----	-----
Sample Of..... North Trenton Firegate	Helium He	-----	-----
	Hydrogen H2	-----	-----
	Argon Ar	-----	-----
Pressure..... 205 psig	Methane C1	94.811	16.017
Temperature... 45F	Ethane C2	2.493	0.665
Atm. Temp..... N/A	Propane C3	0.428	0.118
Sample Date... 02/23/07	i-Butane iC4	0.070	0.023
Sample Time... 10:30 AM	n-Butane nC4	0.077	0.024
Sampled By... NIPSCO	i-Pentane iC5	0.025	0.009
Analysis Date, 03/12/07	n-Pentane nC5	0.015	0.005
Sample Cyl.No. PL 2054	Hexanes+ C6+	0.025	0.011
	<b>Totals:</b>	<b>100.000</b>	<b>17.144</b>

<b>CALCULATIONS/METHODS</b>	<b>GASOLINE CONTENT (GCM)</b>	
Real Gas, 14.65 psia & 60 F	Ethane & Heavier .....	0.855
Applicable current GPR methods, procedures, and constants are used.	Propane & Heavier .....	0.190
	Butanes & Heavier .....	0.072
	Pentanes & Heavier .....	0.025
	26# Gasoline .....	0.038

<b>DISTRIBUTION</b>	<b>HEATING VALUE (Gross Btu/CF)</b>
NIPSCO	Water Vapor Saturated ..
1-Jon Schirm; Royal Center, IN	Dry.....
1-FAX to Jon @ (574) 643-3175	

<b>SPECIFIC GRAVITY</b>
Water Vapor Saturated ..
Dry.....

<b>COMPRESSIBILITY FACTOR (Z)</b>
Water Vapor Saturated ..
Dry.....

REMARKS/COMMENTS/OTHER

Field Sulfur Determination  
Hydrogen Sulfide: 0.60 Grains/100 SCF  
9.79 ppmv  
Mercaptan (as Sulfur): 1.09 Grains/100 SCF

COMPOUND	Storage	Royal Center
C6+ Mole % from Gas Sample		0.025
Other Hexanes	0.5319	0.01330
n-Hexane	0.1913	0.00478
Heptane	0.1002	0.00251
2,2,4 Trimethylpentane	0.0103	0.00026
Octanes+	0.1241	0.00310
Benzene	0.0205	0.00051
Toluene	0.0159	0.00040
Ethylbenzene	0.0011	0.00003
Xylenes	0.0046	0.00012

When an extended gas analysis is not available, the C6+ composition must be estimated. The following table lists suggested breakdowns of the C6+ group of compounds for storage field glycol dehydrators. These C6+ compositions are based on sampling data from more than 90 representative gas streams. (Ref. GRI Gly-Calc Version 4 Glycol Dehydrator Emissions: Sampling & Analytical Methods & Estimation Techniques. GRI Topical Report. Gas Research Institute, Chicago, IL. GRI-94/0324)

COMBINED REGENERATOR VENT/FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	2.5008	60.018	10.9533
Ethane	0.5188	12.450	2.2722
Propane	0.3078	7.386	1.3480
Isobutane	0.1123	2.694	0.4917
n-Butane	0.1739	4.174	0.7617
Isopentane	0.0842	2.021	0.3688
n-Pentane	0.0682	1.637	0.2988
n-Hexane	0.0528	1.267	0.2313
Other Hexanes	0.1050	2.520	0.4598
Heptanes	0.0733	1.759	0.3211
2, 2, 4-Trimethylpentane	0.0036	0.088	0.0160
Benzene	0.2382	5.718	1.0435
Toluene	0.3807	9.138	1.6677
Ethylbenzene	0.0525	1.259	0.2298
Xylenes	0.3227	7.745	1.4135
C8+ Heavies	0.4698	11.275	2.0577
<b>Total Emissions</b>	<b>5.4646</b>	<b>131.150</b>	<b>23.9349</b>
<b>Total Hydrocarbon Emissions</b>	<b>5.4646</b>	<b>131.150</b>	<b>23.9349</b>
<b>Total VOC Emissions</b>	<b>2.4451</b>	<b>58.682</b>	<b>10.7094</b>
<b>Total HAP Emissions</b>	<b>1.0506</b>	<b>25.215</b>	<b>4.6017</b>
<b>Total BTEX Emissions</b>	<b>0.9942</b>	<b>23.860</b>	<b>4.3544</b>