



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53 IGCN 1003
(317) 232-8603
(800) 451-6027
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TO: Interested Parties / Applicant
DATE: November 20, 2007
RE: Cummins, Inc., Power Generation Engine / 005-23094-00073
FROM: Nisha Sizemore
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, Room 1049, 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.dot 03/23/06



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Federally Enforceable State Operating Permit Renewal OFFICE OF AIR QUALITY

**Cummins Inc. Power Generation Engine Testing Facility
4760 Ray Boll Blvd.
Columbus, Indiana 47203**

(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.: F005-23094-00073	
Issued by: Origin signed by Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date: November 20, 2007 Expiration Date: November 20, 2012

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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.4 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)]

The Permittee owns and operates a stationary engine testing operation.

Source Address:	4760 Ray Boll Blvd., Columbus, Indiana 47203
Mailing Address:	P.O. Box 3005 MC 71500, Columbus, IN 47202-3005
General Source Phone Number:	812-377-1780
SIC Code:	8734
County Location:	Bartholomew
Source Location Status:	Nonattainment for PM 2.5 standard Attainment for all other criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules 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)]

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

- (a) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#1, constructed prior to 1980, rated at 4,960 horsepower, venting to stack S1.
- (b) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#2, constructed prior to 1980, rated at 2,815 horsepower, venting to stack S2.
- (c) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#3, constructed in 1985, rated at 1,340 horsepower, venting to stack S3.
- (d) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#4, constructed in 1988, rated at 870 horsepower, venting to stack S4.
- (e) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#5, constructed in 2006, rated at 1,200 horsepower, located outdoors and exhausting directly to the atmosphere.
- (f) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#6, constructed in 2006, rated at 1,200 horsepower, located outdoors and exhausting directly to the atmosphere.

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

This source also includes the following insignificant activities, which are specifically regulated, as defined in 326 IAC 2-7-1(21).

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: One (1) natural gas-fired boiler, originally installed in 1980, and replaced with a new unit after 1996, rated at 1.25 million British thermal units per hour. [326 IAC 6-2-4]
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6: one (1) cold cleaner, identified as parts cleaner, installed in 1998. [326 IAC 8-3-5]
- (c) Two (2) diesel fuel storage tanks with a capacity of 270 gallons each.
- (d) Grinding and machining operations controlled with fabric filters with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute used for abrasive blasting. [326 IAC 6-3-2]

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

This 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]

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)]

- (a) This permit, F005-23094-00073, is issued for a fixed term of five (5) 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]

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]

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)]

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)]

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)]

- (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]

- (a) All terms and conditions of permits established prior to F005-23094-00073 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)]

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)]

- (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]

- (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)]

- (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).

- (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.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]

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]

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) The potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) 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.

(c) 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.

(d) 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]

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]

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]

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]

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]

- (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
MC 61-52 IGCN 1003
100 North Senate Avenue
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]

- (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]

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)]

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]

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]

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

- (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]

- (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]

- (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]

- (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

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

Emissions Unit Description [326 IAC 2-8-4(10)]:

- (a) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#1, constructed prior to 1980, rated at 4,960 horsepower, venting to stack S1.
- (b) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#2, constructed prior to 1980, rated at 2,815 horsepower, venting to stack S2.
- (c) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#3, constructed in 1985, rated at 1,340 horsepower, venting to stack S3.
- (d) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#4, constructed in 1988, rated at 870 horsepower, venting to stack S4.
- (e) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#5, constructed in 2006, rated at 1,200 horsepower, located outdoors and exhausting directly to the atmosphere.
- (f) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#6, constructed in 2006, rated at 1,200 horsepower, located outdoors and exhausting directly to the atmosphere.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

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

D.1.1 Nitrogen Oxides (NO_x) [326 IAC 2-8-4]

- (a) Pursuant to 326 IAC 2-8-4, the input of diesel fuel to the six (6) engine test cells (TC#1 through TC#6) shall be limited to less than 453,467 gallons per twelve (12) consecutive month period. Each gallon of biodiesel fuel used shall be considered equal to 1.012 gallons of diesel fuel used.
- (b) For purposes of determining compliance based on NO_x emissions, each million cubic foot (MMCF) of natural gas shall be equivalent to 6,478.70 gallons of diesel fuel.

The NO_x emissions from the six (6) test engine cells shall not exceed 0.438 pounds of NO_x per gallon of diesel fuel per month, 0.443 pounds of NO_x per MMCF of natural gas per month and 0.452 pounds of NO_x per gallon of biodiesel fuel per month. These limits shall limit the potential to emit NO_x from the entire source to less than one hundred (100) tons per year and shall make the requirements of 326 IAC 2-7, not applicable.

D.1.2 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) the SO₂ emissions from the six (6) engine test cells (TC#1 through TC#6) shall not exceed five tenths (0.5) pounds per MMBtu heat input when burning diesel fuel. Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated using a calendar month average.

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

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities.

Compliance Determination Requirements

D.1.4 Testing Requirements [326 IAC 2-8-4(3)(A)][326 IAC 2-1.1-11]

The source is not currently using biodiesel fuel, but within 180 days of the startup of using biodiesel fuel for testing in order to demonstrate compliance with Condition D.1.1(a) and (b) the Permittee shall perform NO_x testing for at least one (1) of the six (6) engine test cells, identified as TC#1 through TC#6, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing.

D.1.5 Sulfur Dioxide Emissions and Sulfur Content

Compliance shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million Btu heat input by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the six (6) engine test cells (TC#1 through TC#6), using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to any of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

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

D.1.6 Visible Emissions Notations

- (a) Visible emission notations of the six (6) engine test cells (TC#1 through TC#6) exhausts shall be performed once per day during normal daylight operations when burning diesel fuel. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take

response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.7 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain monthly records of the gallons of diesel fuel burned, the cubic feet of natural gas burned, and the equivalent gallons of diesel fuel burned.
- (b) To document compliance with Condition D.1.2, the Permittee shall maintain records in accordance with (1) through (6) below.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) Actual diesel and biodiesel fuel usage since last compliance determination period and equivalent sulfur dioxide emissions;
 - (3) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period, the natural gas fired boiler certification does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1); and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

- (4) Fuel supplier certifications.
- (5) The name of the fuel supplier; and
- (6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

- (c) To document compliance with Condition D.1.5, the Permittee shall maintain daily records of the visible emission notations of the six (6) engine test cells (TC#1 through TC#6) exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.8 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.1 shall be submitted to the addresses 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-8-4(10)]: Insignificant Activities

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: One (1) natural gas-fired boiler, originally installed in 1980, and replaced with a new unit after 1996, rated at 1.25 million British thermal units per hour. [326 IAC 6-2-4]
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6:
 - One (1) cold cleaner, identified as parts cleaner, installed in 1998.
[326 IAC 8-3-5]
- (c) Two (2) diesel fuel storage tanks with a capacity of 270 gallons each.
- (d) Grinding and machining operations controlled with fabric filters with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute used for abrasive blasting.
[326 IAC 6-3-2]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

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

D.2.1 Particulate Matter (PM) [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4(a), the PM emissions from the one (1) boiler are limited to 0.6 pounds per million British thermal units.

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), the owner or operator of a cold cleaner degreaser without remote solvent reservoirs constructed after July 1, 1990, shall ensure that the following 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 (38EC) (one hundred degrees Fahrenheit (100EF));
 - (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 (38EC) (one hundred degrees Fahrenheit (100EF)), 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 (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):
 - (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 of 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.

D.2.3 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e), the particulate matter from the grinding and machining operations shall not exceed 0.551 pounds per hour when operating at a process weight rate of less than 100 pounds per hour. When operating at a process weight rate of 100 pounds per hour or more, the particulate matter shall not exceed the pound per hour emission rate established as E in the following equation:

Interpolation and extrapolation of the data for process weight rates up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour;
and P = process weight rate in tons per hour

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

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

Source Name: Cummins Inc. Power Generation Engine Testing Facility
Source Address: 4760 Ray Boll Blvd., Columbus, Indiana 47203
Mailing Address: P.O. Box 3005 MC 71500, Columbus, IN 47202-3005
FESOP Permit No.: F005-23094-00073

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: Cummins Inc. Power Generation Engine Testing Facility
Source Address: 4760 Ray Boll Blvd., Columbus, Indiana 47203
Mailing Address: P.O. Box 3005 MC 71500, Columbus, IN 47202-3005
FESOP Permit No.: F005-23094-00073

This form consists of 2 pages

Page 1 of 2

- | |
|---|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none">• 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• 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 |
|---|

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 ₂ , VOC, NO _x , 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
 FESOP Quarterly Report**

Source Name: Cummins Inc. Power Generation Engine Testing Facility
 Source Address: 4760 Ray Boll Blvd., Columbus, Indiana 47203
 Mailing Address: P.O. Box 3005 MC 71500, Columbus, IN 47202-3005
 FESOP Permit No.: F005-23094-00073
 Facilities: Six (6) engine test cells (TC#1 through TC#6)
 Parameter: Gallons of diesel fuel burned (NO_x)
 Limit: Less than a total of 453,467 gallons per twelve (12) consecutive month period.
 For purposes of determining compliance based on NO_x emissions, each million cubic foot (MMCF) of natural gas shall be equivalent to 6,478.10 gallons of diesel fuel. Each gallon of biodiesel used shall be considered equal to using 1.012 gallons of diesel fuel. The NO_x emissions from the six (6) test engine cells shall not exceed 0.438 pounds of NO_x per gallon of diesel fuel per month, 0.443 pounds of NO_x per MMCF of natural gas per month and 0.452 pounds of NO_x per gallon of biodiesel fuel per month.

Equivalent Diesel Fuel Usage (gallons) = Diesel Fuel Usage (gallons)
 + (Biodiesel Fuel Usage (gallons) x 1.012)

YEAR: _____

Month	Diesel fuel burned (gallons)	Diesel fuel burned (gallons)	Diesel fuel burned (gallons)
	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: Cummins Inc. Power Generation Engine Testing Facility
 Source Address: 4760 Ray Boll Blvd., Columbus, Indiana 47203
 Mailing Address: P.O. Box 3005 MC 71500, Columbus, IN 47202-3005
 FESOP Permit No.: F005-23094-00073

Months: _____ **to** _____ **Year:** _____

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".	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

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

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 for a Federally Enforceable State Operating Permit (FESOP) Renewal

Source Name: Cummins Inc. Power Generation Engine Testing Facility
Source Location: 4760 Ray Boll Blvd., Columbus, IN 47203
County: Bartholomew
SIC Code: 8734
Operation Permit No.: T005-23094-00073
Permit Reviewer: Janet Mobley

On October 1, 2007, the Office of Air Quality (OAQ) had a notice published in the Republic, Columbus, Indiana, stating that Cummins Inc. Power Generation Engine Testing Facility had applied for a FESOP Permit Renewal to operate a stationary diesel engine testing operation. The notice also stated that OAQ proposed to issue a renewal 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 30, 2007, OAQ received comments from Elizabeth J. Hill of Bruce Carter Associates, a consultant for Cummins Inc. Power Generation Engine Testing Facility. IDEM, OAQ has decided to make the following changes. The TSD will remain as it originally appeared when published. Changes to the permit or TSD that occur after the permit has been published are documented in this addendum (bolded language has been added, the language with a line through it has been deleted). The Table of Contents has been modified to reflect these changes.

Comment 1: The source stated that there is not a comma in between Cummins and Inc. The company name should read Cummins Inc. Power Generation Engine Testing Facility

IDEM Response to Comment 1: IDEM will change the title appropriately as indicated. No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document (bolded language has been added, the language with a line through it has been deleted). This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. The permit and Appendix A have been changed.

Comment 2: The source is requesting the flexibility to use No. 1 diesel fuel for testing. A Material Safety Data Sheet for the product was received.

IDEM Response to Comment 2: The permit currently states that diesel, biodiesel and fuel oil can be used so no change is needed to the permit.

Comment 3: The source is not sure when they will begin the biodiesel testing. Condition D.1.4 required testing on the biodiesel operation within 180 days of the renewal being issued. Testing may not begin until late 2008 or early 2009 and wanted to modify the language to allow testing within 180 days of the test start date.

IDEM Response to Comment 3: IDEM agrees and the permit condition D.1.4 has been modified to allow for a later testing date.

D.1.4 Testing Requirements [326 IAC 2-8-4(3)(A)][326 IAC 2-1.1-11]

~~Within 180 days after issuance of FESOP Renewal 005-23094-00073,~~ **The source is not currently using biodiesel fuel**, but within 180 days of the startup of using biodiesel fuel for testing in order to demonstrate compliance with Condition D.1.1(a) **and** (b) ~~and (c), while using biodiesel fuel~~ the Permittee shall perform NO_x testing for at least one (1) of the six (6) engine test cells, identified as TC#1 through TC#6, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing.

**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:	Cummins, Inc. Power Generation Engine Testing Facility
Source Location:	4760 Ray Boll Blvd., Columbus, Indiana 47203
County:	Bartholomew
SIC Code:	8734
Operation Permit:	F005-13931-00073
Permit Issuance Date:	February 25, 2002
Permit Renewal No.:	F005-23094-00073
Permit Reviewer:	Janet Mobley

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Cummins, Inc. Power Generation Engine Testing Facility for a stationary diesel engine testing operation.

History

On May 15, 2006, Cummins, Inc. Power Generation Engine Testing Facility submitted an application to the OAQ requesting to renew its operating permit. Cummins, Inc. Power Generation Engine Testing Facility was issued a FESOP on February 25, 2002.

On November 17, 2006, Cummins, Inc. Power Generation Engine Testing Facility submitted a request to include the use of biodiesel fuel in addition to diesel fuel at the engine test cells. The emissions unit descriptions have been modified in the Technical Support Document (TSD) and in Condition A.2 of this permit. The unit descriptions are revised to include biodiesel as a fuel where appropriate.

Source Definition

As determined in the FESOP 005-13931-00073, issued February 25, 2002, this plant, located at 4760 Ray Boll Boulevard, Columbus, Indiana 47203 is not considered to be a combined source with any of the other Cummins plants in the Columbus area, and shall be considered as an independent source for the purposes of air permitting.

According to IDEM, OAQ records, in addition to the Power Generation Engine Testing Facility, Cummins Engine Company, Inc. operates six (6) other plants in or around Columbus, Indiana. Those plants are listed and the mileage difference from this operation:

- | | | |
|-----|--|-------------|
| (a) | Midrange Engine Technical Center (Plant ID 005-00069), 1532 E. 14th Street | 3.52 miles |
| (b) | Olympic Express Building (Plant ID 005-00063), 3540 W 450 South | 11.71 miles |
| (c) | Columbus Engine Plant (Plant ID 005-00015), 1000 5th Street | 4.69 miles |
| (d) | Fuel Systems Plant (Plant ID 005-00053), 1460 National Road | 3.79 miles |
| (e) | Technical Center (Plant ID 005-00002), 1900 McKinley Avenue | 4.32 miles |
| (f) | Midrange Engine Plant (Plant ID 005-00047), I-65 at Hwy 58. | 11.69 miles |

Each of the above plants share common ownership, however, the day-to-day control and operations management is unique to each site. Of these plants, only the Olympic Express Building (Plant ID 005-00069) and the Technical Center (Plant ID 005-00002) share the same SIC code (8734) as this plant. The other plants have the SIC code 3519.

The only plant which provides output to this plant is the Cummins Engine Plant (Plant ID 005-00015), located over three miles away. Less than one percent (1%) of the Cummins Engine Plant output is provided to this plant.

Although the plants have the same owner, the plants are miles apart from each other and there is no direct support relationship between any of them. Therefore, this plant, the Power Generation Engine Testing Facility, located at 4760 Ray Boll Boulevard, is not considered to be a combined source with any of the other Cummins plants in the Columbus area, and shall be considered as an independent source for the purposes of air permitting.

Permitted Emission Units and Pollution Control Equipment

The operation includes the following emission units and pollution control devices:

- (a) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#1, constructed prior to 1980, rated at 4,960 horsepower, venting to stack S1.
- (b) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#2, constructed prior to 1980, rated at 2,815 horsepower, venting to stack S2.
- (c) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#3, constructed in 1985, rated at 1,340 horsepower, venting to stack S3.
- (d) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#4, constructed in 1988, rated at 870 horsepower, venting to stack S4.
- (e) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#5, constructed in 2006, rated at 1,200 horsepower, located outdoors and exhausting directly to the atmosphere.
- (f) One (1) engine test cell, firing diesel, biodiesel or natural gas, identified as TC#6, constructed in 2006, rated at 1,200 horsepower, located outdoors and exhausting directly to the atmosphere.

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

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour: One (1) natural gas-fired boiler, installed in 1996, rated at 1.25 million British thermal units per hour. [326 IAC 6-2-4]
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6: one (1) cold cleaner, identified as parts cleaner, installed in 1998. [326 IAC 8-3-5]
- (c) Two (2) diesel fuel storage tanks with a capacity of 270 gallons each.
- (d) Grinding and machining operations controlled with fabric filters with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute used for abrasive blasting. [326 IAC 6-3-2]

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit

There are no unpermitted emission units operating at this source during the review process.

Existing Approvals

Since the issuance of the FESOP (005-13931-00073) on February 25, 2002, the source has constructed or has been operating under the following approvals as well:

- (a) Administrative Amendment No. 005-15674-00073 issued on June 10, 2002; and
- (b) Significant Permit Revision No.005-22799-00073 issued on July 20, 2006

All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	Test Cell #1	20 ft	20"	2000	1000
2	Test Cell #2	16 ft.	8"	9000	1000
3	Test Cell #3	16 ft.	8"	9000	1000
4	Test Cell #4	16 ft.	8"	6000	1000

* Test Engine Cells TC#5 and TC#6 are located outdoors and exhaust directly to the atmosphere.

Emission Calculations

See Appendix A of this document for detailed emission calculations (Pages 1 through 8).

County Attainment Status

The source is located in Bartholomew County.

Pollutant	Status
PM-10	Attainment
PM-2.5	Attainment
SO ₂	Attainment
NOx	Attainment
8-Hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Bartholomew 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 PM

2.5 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 surrogate for PM2.5 emissions.

- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 emissions and NOx emissions are considered when evaluating the rule applicability relating to ozone. Bartholomew County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Bartholomew County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (d) 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 applicability.
- (e) 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.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Pollutant	tons/year
PM	13.89
PM ₁₀	7.94
SO ₂	69.703
VOC	16.5
CO	55.46
NO _x	392.5

HAPs	tons/yr
Benzene	0.025
Dichlorobenzene	0.000007
Formaldehyde	0.003
Hexane	0.009
Toluene	0.095
Lead Compounds	0.00003
Cadmium Compounds	0.000006
Chromium Compounds	0.000008
Manganese Compounds	0.000002
Nickel Compounds	0.000001
Total	0.132

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of NO_x is equal to or greater than 100 tons per year. The source is subject to the provisions of 326 IAC 2-7. However, the source has agreed to limit their NO_x emissions to less than Title V levels, therefore the source will be issued a FESOP.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants are less than 100 tons per year.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year.
- (d) **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 applicability.

Actual Emissions

No previous emission data has been received from the source.

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.

Process/emission unit	Potential To Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
6 engine test cells	3.12	1.82	15.7	3.82	26.9	< 99.4	Negligible
Parts Washer	0.010	0.042	0.003	-	-	-	-
Insignificant Activities	-	-	-	1.02	0.460	0.548	0.010
Total Emissions	3.12	1.82	15.7	3.82	26.9	< 100	< 10 < 25

"-" does not emit a pollutant and negligible denotes an emission level of a pollutant emitted at less than 0.1 tons per year

- (a) This existing stationary source is not major for PSD because the emissions of each criteria pollutant are less than two hundred fifty (<250) tons per year, and it is not one of the twenty-eight (28) listed source categories.
- (b) **Fugitive Emissions**
 Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are not counted toward the determination of PSD and Emission Offset applicability.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.
- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart P P P P P (Engine Test Cells/Stands), are not included in the permit, because this source is not a major source of HAPs.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart Z Z Z Z Z (Stationary Reciprocating Internal Combustion Engines (RICE)), are not included in the permit, because the stationary RICE is being tested at a stationary RICE test cell/stand, and this source is not a major source of HAPs.
- (d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in this permit renewal.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The source constructed prior to the PSD applicability date of August 7, 1977, and is still a minor existing PSD source. This source is not one of the twenty-eight (28) listed source categories. Although the uncontrolled potential to emit (PTE) of NO_x in excess of 100 tons per year, the source has agreed to limit its NO_x emissions to less than one hundred (100) tons per year. Therefore, 326 IAC 2-2 (PSD) is not applicable.

326 IAC 2-3 (Emission Offset)

This source has opted to continue to operate under 326 IAC 2-8 (FESOP) rules. The source-wide potential NO_x emissions will be limited to less than one hundred (100) tons per year as part of this FESOP Renewal. Therefore, this source is considered a minor source under 326 IAC 2-3 (Emission Offset).

326 IAC 2-6 (Emission Reporting)

This source is located in Bartholomew County and the potential to emit PM₁₀, SO₂, VOC and CO is less than one hundred (100) tons per year. NO_x is more than one hundred (100) tons per year. However, the source has agreed to limit the potential to emit to less than 100 tons per year. Therefore, 326 IAC 2-6 does not apply to this source.

326 IAC 5-1 (Opacity Limitations)

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

State Rule Applicability – Individual Facilities

326 IAC 2-8-4 (FESOP)

The applicant, pursuant to permit number F005-13931-00073, has already accepted a diesel fuel limit for the engine test cells (TC#1 through TC#6) of less than 453,467 gallons of diesel fuel per twelve (12) consecutive month period which is equivalent to NO_x emissions of less than 99.4 tons per year. The fuel limit reflects the most recent AP-42 emission factors. The potential to emit of NO_x for the one (1) boiler (0.548 tons per year) has been included when calculating the source-wide limit of less than one hundred (100) tons per year of NO_x.

The source has the capability to burn biodiesel fuel in the six (6) engine test cells. For purposes of determining compliance based on NO_x emissions, each gallon of biodiesel fuel used shall be considered equal to 1.012 gallons of diesel fuel.

The source has the capability to burn natural gas in the six (6) engine test cells. For purposes of determining compliance based on NO_x emissions, each million cubic foot (MMCF) of natural gas shall be equivalent to 6,478.10 gallons of diesel fuel.

The NO_x emissions from the six (6) test engine cells shall not exceed 0.438 pounds of NO_x per gallon of diesel fuel per month, 0.443 pounds of NO_x per MMCF of natural gas per month and 0.452 pounds of NO_x per gallon of biodiesel fuel per month. Since NO_x is the worst-case pollutant when burning either diesel, biodiesel or natural gas, this limit will ensure that all other criteria pollutant emissions are also less than one hundred (100) tons per year.

326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations)

The test cells (TC#1 through TC#6) are subject to 326 IAC 7-1.1 because they have the potential to emit greater than twenty-five (25) tons per year of SO₂ when burning diesel fuel. This rule requires levels of sulfur dioxide emissions from the combustion of diesel fuel not to exceed 0.5 pounds per million British thermal units of heat input (the equivalent of 0.5% sulfur content at a higher heating value of 0.137 million British thermal units per gallon and a maximum heat input rate of 61.032 million British thermal units per hour).

326 IAC 7-2-1 (Sulfur Dioxide Compliance: reporting and methods to determine compliance)

Reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate in pounds per million British thermal units shall be provided upon request to the Office of Air Quality.

Insignificant Activities

326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983)

The one (1) boiler, constructed after 1996, with a heat input capacity of 1.25 million British thermal units per hour, must comply with the requirements of 326 IAC 6-2-4. The emission limitations are based on the following equation given in 326 IAC 6-2-4:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

For the one (1) boiler:

$$Pt = 1.09/(1.25)^{0.26} = 1.03 \text{ lb/MMBtu heat input}$$

Pursuant to 326 IAC 6-2-4(a), for Q less than 10 million British thermal units per hour, Pt shall not exceed 0.6 lb/MMBtu heat input.

Based on Appendix A, the potential to emit of PM from the one (1) boiler, is 0.010 tons per year.

$$0.010 \text{ ton/yr H (2000 lbs/ton / 8760 hrs/yr)} = 0.002 \text{ lb/hr}$$
$$(0.002 \text{ lb/hr} / 1.25 \text{ MMBtu/hr}) = 0.002 \text{ lb PM per MMBtu}$$

Therefore, the one (1) boiler will comply with this rule.

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), the owner or operator of a cold cleaner degreaser without remote solvent reservoirs constructed after July 1, 1990, shall ensure that the following 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 (38EC) (one hundred degrees Fahrenheit (100EF));
 - (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 (38EC) (one hundred degrees Fahrenheit (100EF)), 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 (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):

- (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.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(e), the particulate matter from the grinding and machining operations shall not exceed 0.551 pounds per hour when operating at a process weight rate of less than 100 pounds per hour. When operating at a process weight rate of 100 pounds per hour or more, the particulate matter shall not exceed the pound per hour emission rate established as E in the following equation:

Interpolation and extrapolation of the data for process weight rates up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour;
and P = process weight rate in tons per hour

Testing Requirements

All diesel and natural gas emission calculations were based on AP-42 or FIRE 6.25 emission factors.

The six (6) engine test cells, identified as TC#1 through TC#6, have applicable one-time compliance determination conditions as specified below:

Within 180 days after issuance of FESOP Renewal 005-23094-00073, in order to demonstrate compliance with Condition D.1.1(a) and (b), while using biodiesel fuel the Permittee shall perform NO_x testing for at least one (1) of the six (6) engine test cells, identified as TC#1 through TC#6, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing.

Compliance Determination and Monitoring 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 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:

Visible emissions notations of the six (6) diesel engine test cells (TC#1 through TC#6) stack exhausts shall be performed once per day during normal daylight operations when burning diesel fuel. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting start up or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

These monitoring conditions are necessary to ensure compliance with 326 IAC 2-8 (FESOP).

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 application for the purposes of this review was received on May 15, 2006. Additional information was received on November 17, 2006.

Conclusion

The operation of this diesel engine testing source shall be subject to the conditions of the attached FESOP Renewal No.: F005-23094-00073.

Appendix A: Emission Summary Page 1 of 8 TSD App A
Company Name: Cummins Inc., Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47203
Permit No: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006

Uncontrolled Emissions

Emission Units	PM	PM ₁₀	SO ₂	VOC	CO	NOx	HAPs
Test Cells TC#1 through 6	13.79 ¹	7.9 ¹	69.7 ¹	16.0 ²	55.0 ²	392 ²	0.132
Insignificant Activities	0.10	0.04	0.003	0.52	0.46	0.548	
Total	13.89	7.94	69.703	16.5	55.46	392.5	<10 tons single <25 tons total

Controlled Emissions

Emission Units	PM	PM ₁₀	SO ₂	VOC	CO	NOx	HAPs
Test Cells TC#1 through 6	3.11	1.78	12.43	3.11	26.4	99.4	Negligible
Insignificant Activities	0.01	0.04	0.003	1.02	0.46		0.1
Total	3.12	1.82	12.43	4.13	26.86	<100	<10 tons single <25 tons total

1= PTE calculations from burning diesel
2= PTE calculations from natural gas only

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
& Natural Gas**

Test Cells TC #1 through 6

Company Name: Cummins Inc. Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47203
Permit No.: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006

A. Emissions from diesel fuel - TC#1-6

Heat Input Capacity
MM Btu/hr

86.70

S= 0.5 = WEIGHT % SULFUR

Emission Factor in lb/MMBtu	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
0.1	0.0573	0.5 (1.01S)	3.2	0.1	0.85	
Potential Emission in tons/yr	37.97	21.76	191.8	1215	34.18	322.8
Potential Emission as Limited				99.4		

METHODOLOGY

Emission Factors are from AP 42 (Supplement B 10/96) Table 3.4-1 and Table 3.4-2

Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

*No information was given regarding which method was used to determine the PM emission factor or whether condensable PM is included. The PM10 emission factor is filterable and condensable PM10 combined.

Potential Emissions (lbs/hr) (excluding NOx) = Emission Factor * Specific Heat Capacity(Btu/hp-hr) * (1MMBtu/1,000,000 Btu) * Rating(hp)

B. Emissions from natural gas - TC#1 through TC#6

Heat Input Capacity
MMBtu/hr

86.70

Potential Throughput
MMCF/yr

759

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
10	20.11	0.600	2840	116.00	399.0	
Potential Emission in tons/yr	3.80	7.64	0.228	1078	44.1	151.5
Potential Emission as Limited				99.4		

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

METHODOLOGY

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from FIRE 6.25 SCC #2-03-002-01

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Potential Emissions (lbs/hr) (excluding NOx) = Emission Factor * Specific Heat Capacity(Btu/hp-hr) * (1MMBtu/1,000,000 Btu) * Rating(hp)

Company Name: Cummins Inc. Power Generation Engine Testing Facility
 Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47203
 Permit No.: F005-23094-00073
 Reviewer: Janet Mobley
 Date: November 8, 2006

C. Emissions from biodiesel fuel - TC#1through 6

Heat Input Capacity
 MM Btu/hr

86.70

S= 0.5 = WEIGHT % SULFUR

Emission Factor in lb/MMBtu	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	0.1	0.0573	0.5 (1.01S)	3.23	0.1	0.85
Potential Emission in tons/yr	37.97	21.76	191.8	1227	34.18	322.8

Methodology

Emission Factors are higher for diesel than biodiesel based on "Biodiesel Handling and Use Guidelines" NREL/TP-580-30004f for all pollutants other than NOx

Biodiesel increases Nox emissions by 1.2%. Therefore, biodiesel will result in an increase in Nox. A 1.2% increase has been used.

The higher of the diesel and biodiesel emission factors are used to calculate the worst case emissions.

HP of the engines: 4960,2815,1340,870,1200 and 1200=12,385 hp-hr x 2545 Btu/1 hphr x 1MMBtu/10-06 Btu =31.49 MMBTu/hr

Appendix A: Emission Calculations
HAP Calculations for Test Cells TC #1 through #6

Company Name: Cummins Inc. Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47203
Permit No.: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006

HAPs - Organics					
Emission Factor in lb/MMBtu	Benzene 0.0009	Toluene 0.0004	Xylene 0.0003	1,3-Butadiene 0	Formaldehyde 0.0012
Potential Emission in tons/yr	0.074	0.032	0.023	0.003	0.094

HAPs - Metals				
Emission Factor in lb/MMcf	Acetylaldehyde 0.0008	Acrolein 0.0009	Naphthalene 0.0001	Total HAPs
Potential Emission in tons/yr	0.061	0.073	0.007	0.367

Methodology

Emission Factors are higher for diesel than biodiesel based on "Biodiesel Handling and Use Guidelines" NREL/TP-580-30004 for all pollutants other than Nox B20 increases Nox emissions by 1.2%. Therefore, biodiesel will result in less of an increase in Nox. A 1.2% increase has been used. The higher of the diesel and biodiesel emission factors are used to calculate the worst case emissions.

**Appendix A: Emission Calculations
Test Cells (TC#1 through TC#6)
Fuel Limits and Equivalencies**

**Company Name: Cummins Inc. Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47203
Permit Number: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006**

Diesel fuel limit (existing):

$$\begin{array}{rclcl}
 99.40 \frac{\text{tons NOx}}{\text{year}} & * & 2000 \frac{\text{lbs}}{\text{ton}} & / & 3.2 \frac{\text{lbs NOx}}{\text{MMBtu}} \\
 & & & & \\
 & / & 0.137 \frac{\text{MMBtu}}{\text{gal}} & = & 453,467 \frac{\text{gal}}{\text{year}} \text{ FESOP Limit}
 \end{array}$$

Biodiesel Fuel equivalency:

Diesel Fuel Usage (gallons) x (Biodiesel Fuel Usage (gallons) x 1.012)

$$453,467 \text{ gallons of diesel} \times \frac{1 \text{ gallon of Biodiesel}}{1.012 \text{ gallon of diesel}} = 448,090 \text{ gallons of Biodiesel}$$

Natural gas equivalency:

$$\begin{array}{rclcl}
 \text{Emission Factor (Diesel Fuel):} & 3.2 \frac{\text{lbs NOx}}{\text{MMBtu}} & * & 0.137 \frac{\text{MMBtu}}{\text{gal}} & = & 0.4384 \frac{\text{lbs NOx}}{\text{gallon diesel}} \\
 \\
 \text{Emission Factor (Natural Gas):} & 2840.0 \frac{\text{lbs NOx}}{\text{MMCF natural gas}} & & & & \\
 \\
 \text{Equivalency:} & 2840.0 \frac{\text{lbs NOx}}{\text{MMCF natural gas}} & / & 0.4384 \frac{\text{lbs NOx}}{\text{gallon diesel}} & = & 6478.10 \frac{\text{gallons diesel}}{\text{MMCF natural gas}}
 \end{array}$$

Therefore, each MMCF of natural gas is equivalent to 6478.10 gallons of diesel fuel.
Each gallon of biodiesel used shall be considered equal to using 1.012 gallons of diesel fuel.

METHODOLOGY

Emission Factors are from AP 42 (Supplement B 10/96) Table 3.4-1 and Table 3.4-2 and from FIRE 6.25 SCC #2-03-002-01
0.137 MMBtu/gal is the heat content of the diesel fuel used at this source, as provided in FESOP 005-13931-00073

**Appendix A: Emission Calculations
Parts Cleaner Worst Case Emissions
Insignificant Activity**

Company Name: Cummins Inc., Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47203
Permit No.: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006

Material	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Gal of Mat (gal/yr)	Potential VOC (lbs/day)	Potential VOC (tons/yr)
Solvent	6.8	100.00%	0.0%	100.0%	145.0	2.701	0.493
Potential Emissions						2.70	0.493

METHODOLOGY

Potential VOC Pounds per Day = Solvent Density (lbs/gallon) * weight % volatiles * solvent consumption (gallons/day)

Potential VOC Tons per Year = Potential VOC Pounds per Day * (365 days/yr) * (1 ton/2000 lbs)

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler**

**Company Name: Cummins Inc. Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47202-3005
Permit No.: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

1.250

10.95

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.010	0.042	0.003	0.548	0.030	0.460

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

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

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 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: Cummins Inc. Power Generation Engine Testing Facility
Address City IN Zip: 4760 Ray Boll Blvd., Columbus, IN 47202-3005
Permit No.: F005-23094-00073
Reviewer: Janet Mobley
Date: November 8, 2006

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.150E-05	6.570E-06	4.106E-04	9.855E-03	1.862E-05

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03	Total HAPs
Potential Emission in tons/yr	2.738E-06	6.023E-06	7.665E-06	2.081E-06	1.150E-05	0.010

Methodology is the same as page 4.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.