INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: December 14, 2012

RE: Indiana Research Institute / 005-32257-00104

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07

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December 14, 2012

Don Mccloskey
Indiana Research Institute
1402 Hutchins Ave.
Columbus, Indiana 47201

RE: 005-32257-00104
Significant Source Modification to
Part 70 Operating Permit No.
T005-30139-00104

Dear Mr. Mccloskey:

Indiana Research Institute was issued Part 70 Operating Permit No. T005-32257-00104 on June 08, 2011 for a stationary internal combustion engine manufacturing facility. An application requesting changes to this permit was received on August 27, 2012. Pursuant to 326 IAC 2-7-10.5, the following modifications are approved at this source:

(a) The addition of natural gas capability to four (4) existing test cell, designated as test cells TC1 through TC4. The following is a list of the modified emission units and pollution control devices:

(1) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13 17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

All other conditions of the permit shall remain unchanged and in effect. For your convenience, the entire Part 70 Operating Permit as modified will be provided at issuance.

This decision is subject to the Indiana Administrative Orders and Procedures Act – IC 4-21.5-3-5. If you have any questions on this matter, please contact Ghassan Shalabi, OAQ, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana, 46204-2251, or call at (800) 451-6027, and ask for Ghassan Shalabi or extension (4-5378), or dial (317) 234-5378.

Sincerely,

Tripurari P. Sinha, Ph. D., Section Chief
Permits Branch
Office of Air Quality

Attachments:
Updated Permit
Technical Support Document
PTE Calculations

GS

cc: File – Bartholomew County
Bartholomew County Health Department
U.S. EPA, Region V
Southeast Regional Office

Mr. Don Pridgen
Indiana Research Institute
1402 Hutchins Ave.
Columbus, Indiana 47201

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Significant Source Modification to a Part 70 Source
OFFICE OF AIR QUALITY

Indiana Research Institute
1402 Hutchins Avenue
Columbus, Indiana 47201

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

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 2-7 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. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-7-10.5, applicable to those conditions

Significant Source Modification No.: T005-32257-00104	
Issued by: Tripurari P. Sinha Tripurari P. Sinha, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: December 14, 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.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary internal combustion engine manufacturing facility.

Source Address:	1402 Hutchins Avenue, Columbus, Indiana 47201
General Source Phone Number:	(812) 378-5363
SIC Code:	3519
County Location:	Bartholomew
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

IDEM has determined that Cummins Technical Center (Cummins TC), 005-00002, located at 1900 McKinley Avenue, Columbus, Indiana, and Indiana Research Institute (IRI), 005-00104, located at 1402 Hutchins Avenue, Columbus, Indiana, will be considered two (2) sources as defined by 326 IAC 2-7-1(22) because the plants are not under common ownership or common control, neither plant serves as a support facility for the other; and the plants are not located on contiguous or adjacent properties.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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

(a) Two (2) Low Power Rating (<300 HP) Engine Test Cells, identified as TC5 and TC6, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S5 and S6.

(b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC7 through TC15, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S7 through S15.

(c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

(d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

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 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.3 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]

(a) This permit, T005-30139-00104, 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, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.4 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.5 Enforceability [326 IAC 2-7-7] [IC 13-17-12]

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.6 Severability [326 IAC 2-7-5(5)]

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.7 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

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

B.8 Duty to Provide Information [326 IAC 2-7-5(6)(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. 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.9 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(34), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(34).

B.10 Annual Compliance Certification [326 IAC 2-7-6(5)]

(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. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent 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 and Enforcement 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, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(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 2-7-5(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

B.11 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, 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.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

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

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

The Permittee shall implement the PMPs.

(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. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-16]

(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.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a 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 and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
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 and Enforcement 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 2-7-5(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-4(c)(9) 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 2-7 and any other applicable rules.

(g) 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.

B.13 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced 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 Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.14 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T005-30139-00104 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this combined permit, all previous registrations and permits are superseded by this combined new source review and part 70 operating permit.

B.15 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

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 2-7-3 and 326 IAC 2-7-4(a).

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 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 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-9(a)(3)]

(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 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(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 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3] [326 IAC 2-7-4] [326 IAC 2-7-8(e)]

(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 2-7-4. 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, 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 2-7 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, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) 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 preconstruction approval required by 326 IAC 2-7-10.5 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
Permit Administration and Support Section, 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 2-7-20(b),(c), or (e). 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 2-7-20(b)(1), (c)(1), and (e)(2).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(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 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(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 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) 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.21 Source Modification Requirement [326 IAC 2-7-10.5]

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

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-17-3-2]

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 Part 70 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 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 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 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.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)] [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) Except as provided in 326 IAC 2-7-19(e), 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.25 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [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 2-7-5(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 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 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.3 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.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.5 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). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 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
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 Licensed 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 Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(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.8 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 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, 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 and Enforcement 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(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 2-7-5] [326 IAC 2-7-6]

C.11 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

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

no later than 180 days from the date on which this source commences operation.

The ERP does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.12 Risk Management Plan [326 IAC 2-7-5(12)] [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.13 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to 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 excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning 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 normal or usual manner of operation.

(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 record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(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 submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(b)(3), starting in 2006 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(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, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-7-5(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 except that 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. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, 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) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. 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.18 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 applicable standards for recycling and emissions reduction.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Test Cells not subject to 326 IAC 2-2

(a) Two (2) Low Power Rating (<300 HP) Engine Test Cells, identified as TC5 and TC6, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S5 and S6.

(b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC7 through TC15, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S7 through S15.

(c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

(d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

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

Construction Conditions

General Construction Conditions

D.1.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.1.2 Effective Date of the Permit [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance. Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction, work is suspended for a continuous period of one (1) year or more.

D.1.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operating Conditions

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.4 PSD Minor Limit [326 IAC 2-2]

(a) The total NO_X emissions from the engine test cells, identified as TC1 through TC18, shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Compliance with the above limit will be demonstrated as follows:

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (U_{NG} \times HV_{NG} \times EF_{NG})}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
U_{jp} = Total JP-8 fuel used, in gallons/month.
U_{NG} = Total Natural Gas fuel used, in mmscf/month
EF_{d1} = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EF_{d2} = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
EF_{jp} = NO_X emission factor for JP-8 fuel used, in lb/gallon.
EF_{NG} = NOx emission factor for NG, in lb/mmBtu.
HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

These limits are required to limit the potential to emit NO_X from the entire source to less than 250 tons per year. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to the entire source.

D.1.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for the engine test cells, identified as TC1 through TC18. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

D.1.6 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Within sixty (60) days after achieving maximum production, but no later than one hundred eighty (180) days of operation, compliance with the NO_X limitation in Condition D.1.4 for engine test cells, identified as TC1 through TC18, shall be determined by performance stack tests

Testing shall be conducted as follows:

(a) Testing of both diesel and JP-8 fuel in one of the fifteen (15) engine test cells, identified as TC1 through TC15, rated at <600 hp;

(b) Testing of both diesel and JP-8 fuel in one of the three (3) engine test cells, identified as TC16 through TC18, rated at >600 hp;

such that the engine test cell tested should be rotated during each performance test.

Testing shall be conducted utilizing the methods as approved by the Commissioner. These tests shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.7 Record Keeping Requirements

(a) In order to document compliance with Conditions D.1.4, the Permittee shall maintain monthly records of the NO_X emissions from the engine test cells, identified as TC1 through TC18.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.1.8 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.1.4 shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

SECTION E.1 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, Subpart IIII] [326 IAC 12]

Emission Unit Description [326 IAC 2-7-5(15)]

(a) Two (2) Low Power Rating (<300 HP) Engine Test Cells, identified as TC5 and TC6, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S5 and S6.

(b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC7 through TC15, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S7 through S15.

(c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

(d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

Under 40 CFR 60, Subpart IIII, the engine test cells, identified as TC1 through TC18, comprise the affected source.

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

New Source performance Standards (NSPS) [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]

Pursuant to 40 CFR 60.4218 and Table 8 to 40 CFR 60, Subpart IIII, the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, apply to the operation of the engine test cells, identified as TC1 through TC18, when certifying engines in accordance with 40 CFR 60, Subpart IIII.

E.1.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, Subpart IIII] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the following provisions of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, which are included as Attachment A, for certifying engines in the engine test cells, identified as TC1 through TC18:

(1) 40 CFR 60.4200(a)(1) and (d)
(2) 40 CFR 60.4201
(3) 40 CFR 60.4202
(4) 40 CFR 60.4203
(5) 40 CFR 60.4210

(6) 40 CFR 60.4215
(7) 40 CFR 60.4216
(8) 40 CFR 60.4218
(9) 40 CFR 60.4219
(10) Table 1 to 40 CFR 60, Subpart IIII
(11) Table 2 to 40 CFR 60, Subpart IIII
(12) Table 3 to 40 CFR 60, Subpart IIII
(13) Table 4 to 40 CFR 60, Subpart IIII
(14) Table 5 to 40 CFR 60, Subpart IIII
(15) Table 6 to 40 CFR 60, Subpart IIII
(16) Table 8 to 40 CFR 60, Subpart IIII

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT CERTIFICATION

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Avenue, Columbus, Indiana 47201
Part 70 Permit No.: T 005-30139-00104

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:

Phone:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

100 North Senate Avenue
MC 61-53, IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Avenue, Columbus, Indiana 47201
Part 70 Permit No.: T 005-30139-00104

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), no later than four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance and Enforcement Branch); and
- The Permittee must submit notice in writing or by facsimile no later than two (**2**) 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: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Quarterly Report

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Avenue, Columbus, Indiana 47201
Part 70 Permit No.: T 005-30139-00104
Facility: Engine Test Cells, TC1 through TC18
Parameter: NO_X Emissions
Limit: Total NOx emissions shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR: _____

Month	NO_X Emissions for This Month (tons)	NO_X Emissions for Previous 11 Months (tons)	NO_X Emissions for 12-Month Period (tons)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

Submitted By: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Avenue, Columbus, Indiana 47201
Part 70 Permit No.: T 005-30139-00104

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

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements of this permit, 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".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ 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: _____

Attachment A: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart IIII]

Source Background and Description

Source Name:	Indiana Research Institute
Source Location:	1402 Hutchins Avenue, Columbus, IN 47201
County:	Bartholomew
SIC Code:	3519
Part 70 Operating Permit No.:	T005-30139-00104
Permit Reviewer:	Kimberly Cottrell

Stationary Compression Ignition Internal Combustion Engines NSPS [40 CFR 60, Subpart IIII]

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Source: 71 FR 39172, July 11, 2006, unless otherwise noted.

What This Subpart Covers
§ 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines,

(ii) The model year listed in table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

Emission Standards for Manufacturers

§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 89.112, 40 CFR 89.113, 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.

(d) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power.

§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants for model year 2007 engines, and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(2) For 2011 model year and later, the certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(c) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power.

(d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.

§ 60.4203 How long must my engines meet the emission standards if I am a stationary CI internal combustion engine manufacturer?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§60.4201 and 60.4202 during the useful life of the engines.

Emission Standards for Owners and Operators

§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in §60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

(c) Owners and operators of non-emergency stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in paragraphs (c)(1) and (2) of this section.

(1) Reduce nitrogen oxides (NO_X) emissions by 90 percent or more, or limit the emissions of NO_Xin the stationary CI internal combustion engine exhaust to 1.6 grams per KW-hour (g/KW-hr) (1.2 grams per HP-hour (g/HP-hr)).

(2) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

(d) Owners and operators of emergency stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in paragraphs (d)(1) and (2) of this section.

(1) Reduce NO_X emissions by 90 percent or more, or limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to 1.6 grams per KW-hour (1.2 grams per HP-hour).

(2) Reduce PM emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

Fuel Requirements for Owners and Operators

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

(c) Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of paragraphs (a) and (b) of this section beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator.

(d) Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the Federal Aid Highway System may petition the Administrator for approval to use any fuels mixed with used lubricating oil that do not meet the fuel requirements of paragraphs (a) and (b) of this section. Owners and operators must demonstrate in their petition to the Administrator that there is no other place to use the lubricating oil. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator.

(e) Stationary CI ICE that have a national security exemption under §60.4200(d) are also exempt from the fuel requirements in this section.

Other Requirements for Owners and Operators

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (f) of this section after the dates specified in paragraphs (a) through (f) of this section.

(h) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

Compliance Requirements

§ 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §60.4201(a) through (c) and §60.4202(a), (b) and (d) using the certification procedures required in 40 CFR part 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in §60.4201(d) and §60.4202(c) using the certification procedures required in 40 CFR part 94 subpart C, and must test their engines as specified in 40 CFR part 94.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 40 CFR 1039.125, 40 CFR 1039.130, 40 CFR 1039.135, and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 89 or 40 CFR part 94 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

(1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.

(2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:

(i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.

(ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.

(iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in part 89, 94 or 1039, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in part 89, 94 or 1039, as appropriate, but the words “stationary” must be included instead of “nonroad” or “marine” on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under parts 89, 94, or 1039 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts.

(e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words “and stationary” after the word “nonroad” or “marine,” as appropriate, to the label.

(f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in §60.4202 but does not meet all the emission standards for non-emergency engines in §60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.

(g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as “Fire Pump Applications Only”.

(h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of §§60.4201 or 60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.

(i) The replacement engine provisions of 40 CFR 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

(d) If you are an owner or operator and must comply with the emission standards specified in §60.4204(c) or §60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in §60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and $NO_X$and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit $NO_X$and PM emissions;

(iii) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in §60.4213.

(e) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

Testing Requirements for Owners and Operators

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (d) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

§ 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (d) of this section.

(a) Each performance test must be conducted according to the requirements in §60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must last at least 1 hour.

(d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.

(1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \qquad \text{(Eq. 2)}$$

Where:

C_i= concentration of NO_Xor PM at the control device inlet,

C_o= concentration of NO_Xor PM at the control device outlet, and

R = percent reduction of NO_Xor PM emissions.

(2) You must normalize the NO_Xor PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O_2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO_2) using the procedures described in paragraph (d)(3) of this section.

$$C_{adj} = C_d \frac{5.9}{20.9 - \%O_2} \qquad \text{(Eq. 3)}$$

Where:

C_{adj}= Calculated NO_Xor PM concentration adjusted to 15 percent O_2.

C_d= Measured concentration of NO_Xor PM, uncorrected.

5.9 = 20.9 percent O_2−15 percent O_2, the defined O_2correction value, percent.

$\%O_2$= Measured O_2concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent $O_2$and CO_2concentration is measured in lieu of O_2concentration measurement, a CO_2correction factor is needed. Calculate the CO_2correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

(i) Calculate the fuel-specific $F_o$value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \qquad \text{(Eq. 4)}$$

Where:

F_o= Fuel factor based on the ratio of O_2volume to the ultimate CO_2volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O_2, percent/100.

F_d= Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu).

F_c= Ratio of the volume of CO_2produced to the gross calorific value of the fuel from Method 19, dsm^3 /J ($dscf/10^6$ Btu).

(ii) Calculate the CO_2correction factor for correcting measurement data to 15 percent O_2, as follows:

$$X_{CO_2} = \frac{5.9}{F_c} \quad \text{(Eq. 5)}$$

Where:

X_{CO2}= CO_2correction factor, percent.

5.9 = 20.9 percent O_2−15 percent O_2, the defined O_2correction value, percent.

(iii) Calculate the $NO_X$and PM gas concentrations adjusted to 15 percent O_2using CO_2as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad \text{(Eq. 6)}$$

Where:

C_{adj}= Calculated NO_Xor PM concentration adjusted to 15 percent O_2.

C_d= Measured concentration of NO_Xor PM, uncorrected.

$\%CO_2$= Measured CO_2concentration, dry basis, percent.

(e) To determine compliance with the NO_Xmass per unit output emission limitation, convert the concentration of NO_Xin the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{\text{KW-hour}} \quad \text{(Eq. 7)}$$

Where:

ER = Emission rate in grams per KW-hour.

C_d= Measured NO_Xconcentration in ppm.

$1.912x10^{-3}$= Conversion constant for ppm $NO_X$to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

(f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{KW\text{-}hour} \quad (Eq\ 8)$$

Where:

ER = Emission rate in grams per KW-hour.

C_{adj} = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

Notification, Reports, and Records for Owners and Operators
§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

Special Requirements

§ 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

(a) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §60.4205. Non-emergency stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder, must meet the applicable emission standards in §60.4204(c).

(b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in §60.4207.

§ 60.4216 What requirements must I meet for engines used in Alaska?

(a) Prior to December 1, 2010, owners and operators of stationary CI engines located in areas of Alaska not accessible by the Federal Aid Highway System should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.

(b) The Governor of Alaska may submit for EPA approval, by no later than January 11, 2008, an alternative plan for implementing the requirements of 40 CFR part 60, subpart IIII, for public-sector electrical utilities located in rural areas of Alaska not accessible by the Federal Aid Highway System. This alternative plan must be based on the requirements of section 111 of the Clean Air Act including any increased risks to human health and the environment and must also be based on the unique circumstances related to remote power generation, climatic conditions, and serious economic impacts resulting from implementation of 40 CFR part 60, subpart IIII. If EPA approves by rulemaking process an alternative plan, the provisions as approved by EPA under that plan shall apply to the diesel engines used in new stationary internal combustion engines subject to this paragraph.

§ 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

(a) Owners and operators of stationary CI ICE that do not use diesel fuel, or who have been given authority by the Administrator under §60.4207(d) of this subpart to use fuels that do not meet the fuel requirements of paragraphs (a) and (b) of §60.4207, may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in §60.4202 or §60.4203 using such fuels.

(b) [Reserved]

General Provisions

§ 60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

Definitions

§ 60.4219 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Engine manufacturer means the manufacturer of the engine. See the definition of “manufacturer” in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means either:

(1) The calendar year in which the engine was originally produced, or

(2) The annual new model production period of the engine manufacturer if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year. For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was originally produced.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

Useful life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for useful life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for useful life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007–2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder

[As stated in §§60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007–2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
Maximum engine power	**NMHC + NO_X**	**HC**	**NO_X**	**CO**	**PM**
KW<8 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007–2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder					
[As stated in §§60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]					
	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007–2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
Maximum engine power	NMHC + NO_X	HC	NO_X	CO	PM
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder				
[As stated in §60.4202(a)(1), you must comply with the following emission standards]				
	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
Engine power	Model year(s)	NO_X+ NMHC	CO	PM
KW<8 (HP<11)	2008+	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008+	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008+	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

Table 3 to Subpart IIII of Part 60—Certification Requirements for Stationary Fire Pump Engines	
[As stated in §60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:]	
Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to §60.4202(d)
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines				
[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]				
Maximum engine power	**Model year(s)**	**NMHC + NO_X**	**CO**	**PM**
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+[1]	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+[1]	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+[2]	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+[3]	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+[3]	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

[1]For model years 2011–2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

[2]For model years 2010–2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

[3]In model years 2009–2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

Table 5 to Subpart IIII of Part 60—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines	
[You must comply with the labeling requirements in §60.4210(f) and the recordkeeping requirements in §60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]	
Engine power	**Starting model year**
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

Table 6 to Subpart IIII of Part 60—Optional 3-Mode Test Cycle for Stationary Fire Pump Engines			
[As stated in §60.4210(g), manufacturers of fire pump engines may use the following test cycle for testing fire pump engines:]			
Mode No.	**Engine speed[1]**	**Torque (percent)[2]**	**Weighting factors**
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

[1]Engine speed: ±2 percent of point.

[2]Torque: NFPA certified nameplate HP for 100 percent point. All points should be ±2 percent of engine percent load value.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder

[As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:]

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥30 liters per cylinder	a. Reduce NO_X emissions by 90 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and,	(3) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO_X concentration.
		iv. Measure NO_X at the inlet and outlet of the control device	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see §60.17)	(d) NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	b. Limit the concentration of NO_X in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) If using a control device, the sampling site must be located at the outlet of the control device.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder				
[As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:]				
For each	**Complying with the requirement to**	**You must**	**Using**	**According to the following requirements**
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location; and,	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurement for NO_Xconcentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and,	(3) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO_Xconcentration.
		iv. Measure NO_Xat the exhaust of the stationary internal combustion engine	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see §60.17)	(d) NO_Xconcentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder				
[As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:]				
For each	**Complying with the requirement to**	**You must**	**Using**	**According to the following requirements**
		iv. Measure PM at the inlet and outlet of the control device	(4) Method 5 of 40 CFR part 60, appendix A	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine	(4) Method 5 of 40 CFR part 60, appendix A	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII			
[As stated in §60.4218, you must comply with the following applicable General Provisions:]			
General Provisions citation	**Subject of citation**	**Applies to subpart**	**Explanation**
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes	Except that §60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source and Significant Permit Modifications

Source Description and Location

Source Name:	Indiana Research Institute
Source Location:	1402 Hutchins Avenue, Columbus, IN 47201
County:	Bartholomew
SIC Code:	3519
Part 70 Operating Permit No.:	T005-30139-00104
Operation Permit Issuance Date:	June 08, 2011
Significant Source Modification No.:	005-32257-00104
Significant Permit Modification No.:	005-32324-00104
Permit Reviewer:	Ghassan Shalabi

Existing Approvals

The source was issued Part 70 Operating Permit No. T005-30139-00104 on June 08, 2011. The source has not received any other approvals since then.

County Attainment Status

The source is located in Bartholomew County.

County Attainment Status	
Pollutant	**Designation**
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.
Unclassifiable or attainment effective April 5, 2005, for $PM_{2.5}$.

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Bartholomew County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$

Bartholomew County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$

significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and SO_2 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Bartholomew County has been classified as attainment or unclassifiable in Indiana for PM_{10}, SO_2, NO_2, CO, and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

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 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, and Part 70 Permit applicability.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	**Emissions** (ton/yr)
PM	40.61
PM_{10}	39.89
$PM_{2.5}$	39.89
SO_2	38.61
VOC	47.05
CO	145.18
NO_X	<250
GHGs as CO_2e	65,398.86
HAPs	
Formaldehyde	0.1842
Acetaldehyde	0.1197
Benzene	0.1456
Total	**0.60**

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no regulated pollutant, excluding GHGs, is emitted at a rate of two hundred fifty (250) tons per year or more, emissions of GHGs are less than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) These emissions are based upon Part 70 operating Permit T005-30139-00104 issued on June 08, 2011.

This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Indiana Research Institute on August 27, 2012, relating to the addition of natural gas capability to four (4) existing test cell, designated as test cells TC1 through TC4, which will increase the power rating of the test cells from <300 HP to <600 HP. The following is a list of the modified emission units and pollution control devices:

(a) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2011 and approved for modification in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

Enforcement Issues

There are no pending enforcement actions.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – Part 70

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Appendix A of this TSD reflects the unrestricted potential emissions of the modification.

PTE Change of the Modified Process			
Pollutant	**PTE Before Modification** (ton/yr)	**PTE After Modification** (ton/yr)	**Increase from Modification** (ton/yr)
PM	9.97	19.94	9.97
PM_{10}	9.97	19.94	9.97
$PM_{2.5}$	9.97	19.94	9.97
SO_2	9.33	18.65	9.33
VOC	11.58	23.16	11.58
CO	30.56	61.11	30.56
NO_X	141.84	283.68	141.84
HAPs	0.12	5.70	5.57

This source modification is subject to 326 IAC 2-7-10.5(f), because it is a modification with the potential to emit greater than 25 ton per year of NOx. Additionally, the modification will be incorporated into the Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12 The changes will be incorporated into the permit as a significant

Permit Modification under 326 IAC 2-7-12(d)(1), because it requires the modification of a PSD minor limit condition.

Permit Level Determination – PSD

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 source and permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Potential to Emit (ton/yr) **of the entire source after issuance of this modification**							
Process / Emission Unit	**PM**	**PM_{10}**	**$PM_{2.5}$***	**SO_2**	**VOC**	**CO**	**NO_X**	**GHGs**
Engine Test Cells (TC4 and TC6)	4.99	4.99	4.99	4.66	5.79	15.28	245	3,032.30
Engine Test Cells (TC7- TC15)	22.43	22.43	22.43	20.99	26.05	68.75		27,290.69
Engine Test Cells (TC16 - TC18)	2.51	1.79	1.79	18.18	3.24	30.60		22,946.68
Engine Test Cells (TC1 - TC4)	9.97	9.97	9.97	9.33	11.58	30.56		12.129.19
Paint Booth(P1)	0.71	0.71	0.71	0	0.39	0		0
Total	40.61	39.89	39.89	38.61	47.05	145.18	<250	65,398.86
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000 CO_2e

*$PM_{2.5}$ listed is direct $PM_{2.5}$.

This modification to an existing minor stationary source is not major because the emissions increase is less than the PSD major source thresholds. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability Determination

The following federal rules are applicable to the source due to this modification:

NSPS:

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

NESHAP:

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) applicable to this proposed modification.

CAM:

(c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:

(1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

This source does not contain any units that require the use of a control device to achieve compliance with the representative emission limitations. Therefore, 40 CFR 64 is not applicable to any facilities contained therein.

State Rule Applicability – Individual Facilities

326 IAC 2-2 (PSD)
PSD and Emission Offset applicability is discussed under the Permit Level Determination – PSD section.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The operation of the engine test cells and Paint Booth will emit less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The engine test cells, TC1 through TC18, are not subject to 326 IAC 6-3-2 because the engine test cells are not manufacturing processes.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

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

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. T005-30139-00104. **Deleted language appears as ~~strikethroughs~~ and new language appears in bold:**

Change 1: To incorporate the modification of the test cells, the following conditions are changed as follows:

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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

(a) ~~Six (6)~~ **Two (2)** Low Power Rating (<300 HP) Engine Test Cells, identified as ~~TC1 through~~ **TC5 and** TC6, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks ~~S1 through~~ S5 and S6.

(b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC7 through TC15, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S7 through S15.

(c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

(d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Test Cells not subject to 326 IAC 2-2

(a) ~~Six (6)~~ **Two (2)** Low Power Rating (<300 HP) Engine Test Cells, identified as ~~TC1 through~~ **TC5 and** TC6, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks ~~S1 through~~ S5 and S6.

(b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC7 through TC15, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S7 through S15.

(c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

(d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

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

...

Operating Conditions

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.4 PSD Minor Limit [326 IAC 2-2]

(a) **The total** NO_X emissions from ~~each of~~ the engine test cells, identified as TC1 through TC18, shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Compliance with the above limit will be demonstrated as follows:

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + \mathbf{(U_{NG} \times HV_{NG} \times EF_{NG})}}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
U_{jp} = Total JP-8 fuel used, in gallons/month.
U_{NG} = Total Natural Gas fuel used, in mmscf/month
EF_{d1} = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EF_{d2} = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
EF_{jp} = NO_X emission factor for JP-8 fuel used, in lb/gallon.
EF_{NG} = NOx emission factor for NG, in lb/mmBtu.
HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

These limits are required to limit the potential to emit NO_X from the entire source to less than 250 tons per year. Compliance with these limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to the entire source.

SECTION E.1 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, Subpart IIII] [326 IAC 12]

Emission Unit Description [326 IAC 2-7-5(15)]

(a) ~~Six (6)~~ **Two (2)** Low Power Rating (<300 HP) Engine Test Cells, identified as ~~TC1 through~~ **TC5 and** TC6, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks ~~S1 through~~ S5 and S6.

(b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC7 through TC15, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S7 through S15.

(c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

(d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

Under 40 CFR 60, Subpart IIII, the engine test cells, identified as TC1 through TC18, comprise the affected source.

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

Change 2: Since the source has finished construction and submitted the Affidavit of construction, the first page of the permit is changed as follows:

~~**NEW SOURCE CONSTRUCTION and**~~ PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY

Indiana Research Institute
1402 Hutchins Avenue
Columbus, Indiana 47201

Change 3: Since the source has submitted the Affidavit of Construction, condition B.3 and the Affidavit of Contruction are deleted from the permit as follows:

~~B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4]~~

~~This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 when prior to the start of operation, the following requirements are met:~~

~~(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.~~

~~(b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.~~

~~(c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.~~

~~Mail to: Permit Administration & Support Section
Office of Air Quality
100 North Senate Avenue
MC 61-53, IGCN 1003
Indianapolis, Indiana 46204-2251~~

~~Indiana Research Institute
1402 Hutchins Avenue
Columbus, Indiana 47201~~

~~Affidavit of Construction~~

~~I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)~~

~~1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.~~

~~2. I hold the position of _____ for _____.
(Title) (Company Name)~~

3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)

4. I hereby certify that Indiana Research Institute, located at 1402 Hutchins Avenue, Columbus, Indiana 47201, completed construction of the stationary internal combustion engine manufacturing facility on in conformity with the requirements and intent of the permit application received by the Office of Air Quality on January 21, 2011, and as permitted pursuant to New Source Construction Permit and Part 70 Operating Permit No. T 005-30139-00104, Plant ID No. 005-00104, issued on _____.

5. **Permittee, please cross out the following statement if it does not apply:** Additional (operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit.

Further Affiant said not.
I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature_____

Date_____

STATE OF INDIANA)
_____)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 20____. My Commission expires: _____.

Signature_____

Name _____
(typed or printed)

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 005-32257-00104 Significant Permit. The staff recommend to the Commissioner that this Part 70 Significant Source and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Ghassan Shalabi at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at 317-234-5378 or toll free at 1-800-451-6027 extension 4-5378.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A – Emission Calculations
Technical Support Document (TSD)
Summery of Emissions after modification

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

	Uncontrolled Potential To Emit (ton/yr)								
Process / Emission Unit	**CO**	**NO_x**	**PM**	**PM_{10}**	**PM2.5**	**SO_2**	**VOC**	**Total HAPs**	**GHG**
Engine Test Cells (TC5 - TC6)	15.28	70.92	4.99	4.99	4.99	4.66	5.79	0.06	3032.30
Engine Test Cells (TC7- TC15)	68.75	319.14	22.43	22.43	22.43	20.99	26.05	0.28	27290.69
Engine Test Cells (TC16 - TC18	30.60	68.41	2.51	1.79	1.79	18.18	3.24	0.13	22946.68
Engine Test Cells (TC1 - TC4)	61.11	283.68	19.94	19.94	19.94	18.65	23.16	5.70	12129.19
Paint Booth (P1)	0	0	0.71	0.71	0.71	0	0.39	2.26E-03	
Total Uncontrolled PTE	175.74	742.15	50.58	49.86	49.86	62.49	58.63	6.17	65398.86

31.21 lb/day of HAPS combination

	HAP Uncontrolled Potential To Emit (ton/yr)							
Process / Emission Unit	**Benzene**	**Toluene**	**Xylene**	**Form.**	**Acet.**	**Acrolein**	**PAH**	**1,3 Butadiene**
Engine Test Cells (TC5 - TC6)	0.0150	0.0066	0.0046	0.0190	0.0123	0.0015	0.0027	0.0006
Engine Test Cells (TC7- TC15)	0.0675	0.0296	0.0206	0.0854	0.0555	0.0067	0.0122	0.0028
Engine Test Cells (TC16 - TC18	0.0331	0.0145	0.0101	0.0419	0.0272	0.0033	0.0076	0.0014
Engine Test Cells (TC1 - TC4)	0.1428	0.0709	0.0197	4.0618	0.5710	0.5725	0.0108	0.0025
Paint Booth (P1)	0	0	0	0	0	0	0	0
Total Uncontrolled PTE	0.2584	0.1215	0.0550	4.2081	0.6661	0.5839	0.0333	0.0073

The worst case emissions are shown. For most pollutants, the worst case emissions result from combustion of diesel fuel; however 1, 3 butadiene is only emitted when JP-8 is the fuel. Refer to the following pages to see the analysis for each unit using either fuel.

Formaldehyde Emissions Increase:

Emissions after the modification	1.68 tpy
Emissions before modification	0.1842 tpy
Increase in emissions	1.4958 tpy

	Limited Potential To Emit (ton/yr)						
Process / Emission Unit	**CO**	**NO_x**	**PM**	**PM_{10}/$PM_{2.5}$**	**SO_2**	**VOC**	**Total HAPs**
Engine Test Cells (TC5 - TC6)	15.28	245	4.99	4.99	4.66	5.79	0.06
Engine Test Cells (TC7- TC15)	68.75		22.43	22.43	20.99	26.05	0.28
Engine Test Cells (TC16 - TC18	30.60		2.51	1.79	18.18	3.24	0.13
Engine Test Cells (TC1 - TC4)	61.11		19.94	19.94	18.65	23.16	5.70
Paint Booth (P1)	0	0	0.71	0.71	0	0.39	0.0023
Total Limited PTE	175.74	245	50.58	49.86	62.49	58.63	6.17

Appendix A – Emission Calculations
Technical Support Document (TSD)

Increase in emissions after modification

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

	Uncontrolled Potential To Emit (ton/yr)								
Process / Emission Unit	**CO**	**NO_x**	**PM**	**PM_{10}**	**PM2.5**	**SO_2**	**VOC**	**Total HAPs**	**GHG**
Engine Test Cells (TC1-TC4) Before M	30.56	141.84	9.97	9.97	9.97	9.33	11.58	0.12	
Engine Test Cells (TC1 - TC4) After Mo	61.11	283.68	19.94	19.94	19.94	18.65	23.16	5.70	12129.19
Total Uncontrolled PTE	30.56	141.84	9.97	9.97	9.97	9.33	11.58	5.57	

31.21 lb/day of HAPS combination

	HAP Uncontrolled Potential To Emit (ton/yr)							
Process / Emission Unit	**Benzene**	**Toluene**	**Xylene**	**Form.**	**Acet.**	**Acrolein**	**PAH**	**1,3 Butadiene**
Engine Test Cells (TC1-TC4) Before M	0.0300	0.0132	0.0092	0.0380	0.0247	0.0243	0.0054	0.0012
Engine Test Cells (TC1 - TC4) After Mo	0.1428	0.0709	0.0197	4.0618	0.5710	0.5725	0.0108	0.0025
Total Uncontrolled PTE	0.1127	0.0577	0.0106	4.0239	0.5463	0.5482	0.0054	0.0012

The worst case emissions are shown. For most pollutants, the worst case emissions result from combustion of diesel fuel; however 1, 3 butadiene is only emitted when JP-8 is the fuel. Refer to the following pages to see the analysis for each unit using either fuel.

Formaldehyde Emissions Increase:

Emissions after the modification	1.68 tpy
Emissions before modification	0.1842 tpy
Increase in emissions	1.4958 tpy

Engine Test Cells
for Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition

TC5-TC18

Alternate Fuel -- JP-8

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC5 and TC6	TC7 - TC15	TC16 - TC18	Total
Power Range (HP)	<300	<600	<1500	
No. of Test Cells	2	9	3	14
JP-8 Usage (gal/hr) per test cell	13.40	13.40	20.00	
Maximum Hours Operated per Year	8760	8760	8760	
Total Heat Input Capacity (MMBtu/hr)	3.62	16.28	8.10	
Potential Throughput (MMBtu/yr)	31,694	142,622	70,956	
Maximum Throughput (gal/yr)	234,768	1,056,456	525,600	1,816,824
Sulfur Content (S) of Fuel (% by weight)	0.3	0.3	0.3	

	Pollutant					
	CO	**NO_X**	**PM**	**$PM_{10}/PM_{2.5}$**	**SO_2**	**VOC**
Emission Factor in lb/MMBtu	*0.13*	*0.604*	*0.0425*	*0.0425*	*0.0397*	*0.0493*
Uncontrolled Emissions (tons/yr)						
Engine Test Cells (TC5 - TC6)	2.06	9.57	0.67	0.67	0.63	0.78
Engine Test Cells (TC7- TC15)	9.27	43.07	3.03	3.03	2.83	3.52
Engine Test Cells (TC16 - TC18)	4.61	21.43	1.51	1.51	1.41	1.75
TOTAL (tons/yr)	15.94	74.07	5.21	5.21	4.87	6.05

PSD Minor Limit for NO_X (ton/yr) 245.00

NO_X Emission Factor = 0.082 lb/gal JP-8

	Hazardous Air Pollutants (HAPs)							
	Benzene	**Toluene**	**Xylene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**1,3 Butadiene**	**TOTAL**
Emission Factor in lb/MMBtu	*9.33E-04*	*4.09E-04*	*2.85E-04*	*1.18E-03*	*7.67E-04*	*9.25E-05*	*3.91E-05*	
Uncontrolled Emissions (tons/yr)								
Engine Test Cells (TC5 - TC6)	0.0148	0.0065	0.0045	0.0187	0.0122	0.0015	0.0006	0.0587
Engine Test Cells (TC7- TC15)	0.0665	0.0292	0.0203	0.0841	0.0547	0.0066	0.0028	0.2642
Engine Test Cells (TC16 - TC18)	0.0331	0.0145	0.0101	0.0419	0.0272	0.0033	0.0014	0.1315
TOTAL (tons/yr)	0.1144	0.0502	0.0350	0.1447	0.0941	0.0113	0.0048	0.4544

Methodology
Emission factors for JP-8 adapted from "Emissions from a 6.5 HMMWV Enigine on Low Sulfur Diesel Fuel and JP-8", Tables: 2, 2A, and 4. (Interim report TFLRF No. 376 / DAAE-07-99-C-L053 (WD-11))

Fuel Heating Value = 135,000 Btu/gal JP-8
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = JP-8 Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Compliance Demonstration for NO_X emissions

$$E = \frac{(EFd1 \times Ud1) + (EFd2 \times Ud2) + (EFjp \times Ujp)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
Ud1 = Total diesel fuel used in engines rated <600hp, in gallons/month.
Ud2 = Total diesel fuel used in engines rated >600hp, in gallons/month.
Ujp = Total JP-8 fuel used, in gallons/month.
EFd1 = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EFd2 = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
Efjp = NO_X emission factor for JP-8 fuel used, in lb/gallon.

Engine Test Cells

for **Modified** Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition

TC1-TC4

Alternate Fuel -- JP-8

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC1 - TC4	Total
Power Range (HP)	<600	
No. of Test Cells	4	4
JP-8 Usage (gal/hr) per test cell	26.80	
Maximum Hours Operated per Year	8760	
Total Heat Input Capacity (MMBtu/hr)	14.47	
Potential Throughput (MMBtu/yr)	126,775	
Maximum Throughput (gal/yr)	939,072	939,072
Sulfur Content (S) of Fuel (% by weight)	0.3	

	Pollutant					
	CO	**NO_X**	**PM**	**$PM_{10}/PM_{2.5}$**	**SO_2**	**VOC**
Emission Factor in lb/MMBtu	*0.13*	*0.604*	*0.0425*	*0.0425*	*0.0397*	*0.0493*
Uncontrolled Emissions (tons/yr)						
Test Cell (TC1-TC4)	8.24	38.29	2.69	2.69	2.52	3.12
TOTAL (tons/yr)	8.24	38.29	2.69	2.69	2.52	3.12

PSD Minor Limit for NO_X (ton/yr) 245.00

NO_X Emission Factor = 0.082 lb/gal JP-8

	Hazardous Air Pollutants (HAPs)							
	Benzene	**Toluene**	**Xylene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**1,3 Butadiene**	**TOTAL**
Emission Factor in lb/MMBtu	*9.33E-04*	*4.09E-04*	*2.85E-04*	*1.18E-03*	*7.67E-04*	*9.25E-05*	*3.91E-05*	
Uncontrolled Emissions (tons/yr)								
Test Cell (TC1-TC4)	0.0591	0.0259	0.0181	0.0748	0.0486	0.0059	0.0025	0.2349
TOTAL (tons/yr)	0.0591	0.0259	0.0181	0.0748	0.0486	0.0059	0.0025	0.2349

Worse HAP = 0.2 tpy = **1.3** lb/yr

Methodology

Emission factors for JP-8 adapted from "Emissions from a 6.5 HMMWV Enigine on Low Sulfur Diesel Fuel and JP-8", Tables: 2, 2A, and 4. (Interim report TFLRF No. 376 / DAAE-07-99-C-L053 (WD-11))

Fuel Heating Value = 135,000 Btu/gal JP-8
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = JP-8 Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Compliance Demonstration for NO_X emissions

$$E = \frac{(EFd1 \times Ud1) + (EFd2 \times Ud2) + (EFjp \times Ujp)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
Ud1 = Total diesel fuel used in engines rated <600hp, in gallons/month.
Ud2 = Total diesel fuel used in engines rated >600hp, in gallons/month.
Ujp = Total JP-8 fuel used, in gallons/month.
EFd1 = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EFd2 = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
Efjp = NO_X emission factor for JP-8 fuel used, in lb/gallon.

Engine Test Cells

for Reciprocating Internal Combustion Engines **before modification**
4 Stroke, Lean Burn, Compression Ignition

TC1-TC4

Alternate Fuel -- JP-8

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC1 - TC4	Total
Power Range (HP)	<300	
No. of Test Cells	4	4
JP-8 Usage (gal/hr) per test cell	13.40	
Maximum Hours Operated per Year	8760	
Total Heat Input Capacity (MMBtu/hr)	7.24	
Potential Throughput (MMBtu/yr)	63,387	
Maximum Throughput (gal/yr)	469,536	469,536
Sulfur Content (S) of Fuel (% by weight)	0.3	

	Pollutant					
	CO	NO_X	PM	$PM_{10}/PM_{2.5}$	SO_2	VOC
Emission Factor in lb/MMBtu	*0.13*	*0.604*	*0.0425*	*0.0425*	*0.0397*	*0.0493*
Uncontrolled Emissions (tons/yr)						
Test Cell (TC1-TC4)	4.12	19.14	1.35	1.35	1.26	1.56
TOTAL (tons/yr)	4.12	19.14	1.35	1.35	1.26	1.56

PSD Minor Limit for NO_X (ton/yr) 245.00

NO_X Emission Factor = 0.082 lb/gal JP-8

	Hazardous Air Pollutants (HAPs)							
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	1,3 Butadiene	TOTAL
Emission Factor in lb/MMBtu	*9.33E-04*	*4.09E-04*	*2.85E-04*	*1.18E-03*	*7.67E-04*	*9.25E-05*	*3.91E-05*	
Uncontrolled Emissions (tons/yr)								
Test Cell (TC1-TC4)	0.0296	0.0130	0.0090	0.0374	0.0243	0.0029	0.0012	0.1174
TOTAL (tons/yr)	0.0296	0.0130	0.0090	0.0374	0.0243	0.0029	0.0012	0.1174

Worse HAP = 0.1 tpy = **0.6** lb/yr

Methodology

Emission factors for JP-8 adapted from "Emissions from a 6.5 HMMWV Enigine on Low Sulfur Diesel Fuel and JP-8", Tables: 2, 2A, and 4. (Interim report TFLRF No. 376 / DAAE-07-99-C-L053 (WD-11))

Fuel Heating Value = 135,000 Btu/gal JP-8
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = JP-8 Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Compliance Demonstration for NO_X emissions

$$E = \frac{(EFd1 \times Ud1) + (EFd2 \times Ud2) + (EFjp \times Ujp)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
Ud1 = Total diesel fuel used in engines rated <600hp, in gallons/month.
Ud2 = Total diesel fuel used in engines rated >600hp, in gallons/month.
Ujp = Total JP-8 fuel used, in gallons/month.
EFd1 = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EFd2 = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
Efjp = NO_X emission factor for JP-8 fuel used, in lb/gallon.

Engine Test Cells
for Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition
Fuel Oil #2 -- Diesel

TC5-TC18

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC5 - TC6	TC7 - TC15	TC16 - TC18	Total	Proposed Limit
Power Range (HP)	<300	<600	<1500		
No. of Test Cells	2	9	3	14	
Diesel Fuel Usage (gal/hr) per test cell	13.40	13.40	20.00		
Maximum Hours Operated per Year	8760	8760	8760		
Total Heat Input Capacity (MMBtu/hr)	3.67	16.52	8.22		
Potential Throughput (MMBtu/yr)	32,163	144,734	72,007		
Maximum Throughput (gal/yr)	234,768	1,056,456	525,600	1,816,824	**245 ton/yr**
Sulfur Content (S) of Fuel (% by weight)	0.5	0.5	0.5		

	Pollutant					
	CO	**NO_X**	**PM**	**$PM_{10}/PM_{2.5}$**	**SO_2**	**VOC**
Emission Factor (<600hp) in lb/MMBtu	*0.95*	*4.41*	*0.31*	*0.31*	*0.29*	*0.36*
Emission Factor (>600hp) in lb/MMBtu	*0.85*	*1.9*	*0.0697*	*0.0496*	*0.505*	*0.09*
Uncontrolled Emissions (tons/yr)						
Engine Test Cells (TC5 - TC6)	15.28	70.92	4.99	4.99	4.66	5.79
Engine Test Cells (TC7- TC15)	68.75	319.14	22.43	22.43	20.99	26.05
Engine Test Cells (TC16 - TC18)	30.60	68.41	2.51	1.79	18.18	3.24
TOTAL (tons/yr)	114.63	458.47	29.93	29.20	43.83	35.08

PSD Minor Limit for NO_X (ton/yr) 245

NO_X Emission Factor (<600hp) = 0.604 lb/gal diesel
NO_X Emission Factor (>600hp) = 0.260 lb/gal diesel

	Hazardous Air Pollutants (HAPs)							
	Benzene	**Toluene**	**Xylene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**PAH****	**TOTAL**
Emission Factor (<600hp) in lb/MMBtu	*9.33E-04*	*4.09E-04*	*2.85E-04*	*1.18E-03*	*7.67E-04*	*9.25E-05*	*1.68E-04*	
Emission Factor (>600hp) in lb/MMBtu	*7.76E-04*	*2.81E-04*	*1.93E-04*	*7.89E-05*	*2.52E-05*	*7.88E-06*	*2.12E-04*	
Uncontrolled Emissions (tons/yr)								
Engine Test Cells (TC5 - TC6)	0.0150	0.0066	0.0046	0.0190	0.0123	0.0015	0.0027	0.0617
Engine Test Cells (TC7- TC15)	0.0675	0.0296	0.0206	0.0854	0.0555	0.0067	0.0122	0.2775
Engine Test Cells (TC16 - TC18)	0.0279	0.0101	0.0069	0.0028	0.0009	0.0003	0.0076	0.0567
TOTAL (tons/yr)	0.1105	0.0463	0.0322	0.1072	0.0687	0.0085	0.0225	0.3958

Methodology
Emission Factors for Small Engines (<600hp) are from AP 42 (Supplement B 10/96) Tables 3.3-1, 3.3-2, and 3.3-3
Emission Factors for Large Engines (>600hp) are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5

Fuel Heating Value = 137,000 Btu/gal diesel
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = Diesel Fuel Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Compliance Demonstration for NO_X emissions

$$E = \frac{(EFd1 \times Ud1) + (EFd2 \times Ud2) + (EFjp \times Ujp)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
Ud1 = Total diesel fuel used in engines rated <600hp, in gallons/month.
Ud2 = Total diesel fuel used in engines rated >600hp, in gallons/month.
Ujp = Total JP-8 fuel used, in gallons/month.
EFd1 = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EFd2 = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
Efjp = NO_X emission factor for JP-8 fuel used, in lb/gallon.

Engine Test Cells
for **Modified** Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition
Fuel Oil #2 -- Diesel

TC1-TC4

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC1 - TC4	Proposed Limit
Power Range (HP)	<600	
No. of Test Cells	4	
Diesel Fuel Usage (gal/hr) per test cell	26.80	
Maximum Hours Operated per Year	8760	
Total Heat Input Capacity (MMBtu/hr)	14.69	
Potential Throughput (MMBtu/yr)	128,653	
Maximum Throughput (gal/yr)	939,072	**245 tpy**
Sulfur Content (S) of Fuel (% by weight)	0.5	

	Pollutant					
	CO	**NO_X**	**PM**	**$PM_{10}/PM_{2.5}$**	**SO_2**	**VOC**
Emission Factor (<600hp) in lb/MMBtu	*0.95*	*4.41*	*0.31*	*0.31*	*0.29*	*0.36*
Uncontrolled Emissions (tons/yr)						
Test Cells (TC1-TC4)	61.11	283.68	19.94	19.94	18.65	23.16
TOTAL (tons/yr)	61.11	283.68	19.94	19.94	18.65	23.16

PSD Minor Limit for NO_X (ton/yr) 245 tpy

NO_X Emission Factor (<600hp) = 0.604 lb/gal diesel

	Hazardous Air Pollutants (HAPs)							
	Benzene	**Toluene**	**Xylene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**PAH****	**TOTAL**
Emission Factor (<600hp) in lb/MMBtu	*9.33E-04*	*4.09E-04*	*2.85E-04*	*1.18E-03*	*7.67E-04*	*9.25E-05*	*1.68E-04*	
Uncontrolled Emissions (tons/yr)								
Test Cells (TC1-TC4)	0.0600	0.0263	0.0183	0.0759	0.0493	0.0060	0.0108	0.2467
TOTAL (tons/yr)	0.0600	0.0263	0.0183	0.0759	0.0493	0.0060	0.0108	0.2467

Worse HAP = 0.2 tpy = **1.4** tpy

Methodology
Emission Factors for Small Engines (<600hp) are from AP 42 (Supplement B 10/96) Tables 3.3-1, 3.3-2, and 3.3-3
Emission Factors for Large Engines (>600hp) are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5

Fuel Heating Value = 137,000 Btu/gal diesel
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = Diesel Fuel Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Compliance Demonstration for NO_X emissions

$$E = \frac{(EFd1 \times Ud1) + (EFd2 \times Ud2) + (EFjp \times Ujp)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
Ud1 = Total diesel fuel used in engines rated <600hp, in gallons/month.
Ud2 = Total diesel fuel used in engines rated >600hp, in gallons/month.
Ujp = Total JP-8 fuel used, in gallons/month.
EFd1 = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EFd2 = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
Efjp = NO_X emission factor for JP-8 fuel used, in lb/gallon.

Engine Test Cells
for Reciprocating Internal Combustion Engines **before modification**
4 Stroke, Lean Burn, Compression Ignition
Fuel Oil #2 -- Diesel

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC1 - TC4	Proposed Limit
Power Range (HP)	<300	
No. of Test Cells	4	
Diesel Fuel Usage (gal/hr) per test cell	13.40	
Maximum Hours Operated per Year	8760	
Total Heat Input Capacity (MMBtu/hr)	7.34	
Potential Throughput (MMBtu/yr)	64,326	
Maximum Throughput (gal/yr)	469,536	**245 tpy**
Sulfur Content (S) of Fuel (% by weight)	0.5	

	Pollutant					
	CO	**NO_X**	**PM**	**$PM_{10}/PM_{2.5}$**	**SO_2**	**VOC**
Emission Factor (<600hp) in lb/MMBtu	*0.95*	*4.41*	*0.31*	*0.31*	*0.29*	*0.36*
Uncontrolled Emissions (tons/yr)						
Test Cells (TC1-TC4)	30.56	141.84	9.97	9.97	9.33	11.58
TOTAL (tons/yr)	30.56	141.84	9.97	9.97	9.33	11.58

PSD Minor Limit for NO_X (ton/yr) 245 tpy

NO_X Emission Factor (<600hp) = 0.604 lb/gal diesel

	Hazardous Air Pollutants (HAPs)							
	Benzene	**Toluene**	**Xylene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**PAH****	**TOTAL**
Emission Factor (<600hp) in lb/MMBtu	*9.33E-04*	*4.09E-04*	*2.85E-04*	*1.18E-03*	*7.67E-04*	*9.25E-05*	*1.68E-04*	
Uncontrolled Emissions (tons/yr)								
Test Cells (TC1-TC4)	0.0300	0.0132	0.0092	0.0380	0.0247	0.0030	0.0054	0.1233
TOTAL (tons/yr)	0.0300	0.0132	0.0092	0.0380	0.0247	0.0030	0.0054	0.1233

Worse HAP = 0.1 tpy = **0.7** tpy

Methodology
Emission Factors for Small Engines (<600hp) are from AP 42 (Supplement B 10/96) Tables 3.3-1, 3.3-2, and 3.3-3
Emission Factors for Large Engines (>600hp) are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5

Fuel Heating Value = 137,000 Btu/gal diesel
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = Diesel Fuel Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Compliance Demonstration for NO_X emissions

$$E = \frac{(EFd1 \times Ud1) + (EFd2 \times Ud2) + (EFjp \times Ujp)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_X emissions, in tons/month.
Ud1 = Total diesel fuel used in engines rated <600hp, in gallons/month.
Ud2 = Total diesel fuel used in engines rated >600hp, in gallons/month.
Ujp = Total JP-8 fuel used, in gallons/month.
EFd1 = NO_X emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EFd2 = NO_X emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
Efjp = NO_X emission factor for JP-8 fuel used, in lb/gallon.

Appendix A: Emission Calculations

Reciprocating Internal Combustion Engines - Natural Gas (TC1-TC4)

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity (MMBtu/hr)	16.8
Maximum Hours Operated per Year	8760
Potential Throughput (MMBtu/yr)	147,168

	Pollutant						
	PM	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in lb/MMBtu	0.0099	0.0384	0.0384	5.88E-04	3.17	0.12	0.39
Potential Emission in tons/yr	0.73	2.83	2.83	0.04	233.26	8.83	28.40

Hazardous Air Pollutants (HAPs)

	Pollutant									
	2,2,4-Trimethylpentane	Acetaldehdye	Acrolein	Benzene	Ethylbenzene	Methanol	Styrene	Toluene	Xylenes	Formaldehyde
Emission Factor in lb/MMBtu	8.46E-04	7.76E-03	7.78E-03	1.94E-03	1.08E-04	2.48E-03	5.48E-05	9.63E-04	2.68E-04	5.52E-02
Potential Emission in tons/yr	6.23E-02	5.71E-01	5.72E-01	1.43E-01	7.95E-03	1.82E-01	4.03E-03	7.09E-02	1.97E-02	4.06E+00
									Potential Emission of Total HAPs (tons/yr)	**5.70E+00**

Worst HAP = **4.1 tpy = 22.3 lb/day**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu	1.10E+02	1.45E+00	1.32E-03
Potential Emission in tons/yr	8.09E+03	1.07E+02	9.73E-02

Summed Potential Emissions in tons/yr	**8.20E+03**
CO2e Total in tons/yr	**1.04E+04**

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.2-1
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Paint Booth P1

Air Atomization Spray Coating

Coating 4 Stroke, Lean Burn, Compression Ignition, Reciprocating Internal Combustion Engines

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 3519
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Material	Density (lb/gal)	Weight % Volatile (%)	Weight % Water (%)	Weight % Organics (%)	Weight % Solids (%)	Volume % Volatile (%)	Volume % Water (%)	Volume % Organics (%)	Volume % Solids (%)	Material Usage (gal/unit)	Maximum Capacity (unit/day)	VOC Content (less water & exempt solvents) (lb VOC/gal coating)	VOC Emissions (lb VOC/day)	VOC Emissions (ton VOC/yr)	PM Emissions (ton PM/yr)	lb VOC/gal solids (lb VOC/gal solids)	Transfer Efficiency (%)
09994KWA-1 Cummins 94 Titanium Black Aqua-Zen Enamel	8.72	70.07%	53.80%	16.27%	29.93%	73.46%	56.43%	17.03%	26.54%	0.50	3.0	3.26	2.13	0.39	0.71	5.35	0%

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Material	Density (lb/gal)	Material Usage (gal/unit)	Maximum Capacity (unit/hr)	Weight % Cobalt	Cobalt (ton/yr)	Weight % Glycol Ethers	Glycol Ethers (ton/yr)	Total HAP (ton/yr)
09994KWA-1 Cummins 94 Titanium Black Aqua-Zen Enamel	8.72	0.50	0.125	0.29%	2.07E-03	0.0496%	1.93E-04	2.26E-03

Annual Coating Usage (estimate)

547.5 gal/yr

13.08 lb/day

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/20(

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
4 Midrange Power Rating <600 HP

TC1-TC4

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Output Horsepower Rating (hp)	2400.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	21,024,000

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	1.21E+04	4.87E-01	9.73E-02

Summed Potential Emissions in tons/yr	**1.21E+04**
CO2e Total in tons/yr	**1.21E+04**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Option B Methodology
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
2 low Power Rating <600 HP

TC 5 and TC6

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Output Horsepower Rating (hp)	600.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	5,256,000

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	3.02E+03	1.22E-01	2.43E-02

Summed Potential Emissions in tons/yr	**3.02E+03**
CO2e Total in tons/yr	**3.03E+03**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Option B Methodology
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
9 Mid Range Rating <600 HP

TC7 - TC15

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Output Horsepower Rating (hp)	5400.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	47,304,000

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	2.72E+04	1.10E+00	2.19E-01

Summed Potential Emissions in tons/yr	**2.72E+04**
CO2e Total in tons/yr	**2.73E+04**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Option B Methodology
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
3 High Power Rating (>600 HP)
TC 16-TC18

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Output Horsepower Rating (hp)	4500.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	39,420,000
Sulfur Content (S) of Fuel (% by weight)	0.000

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16E+00	6.35E-05	9.30E-06
Potential Emission in tons/yr	2.29E+04	1.25E+00	1.83E-01

Summed Potential Emissions in tons/yr	**2.29E+04**
CO2e Total in tons/yr	**2.29E+04**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Option A Methodology
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Option B Methodology
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

GHG Calcs for Alternate Fuel JP8

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
Permit No.: 32257-322324
Plant ID: 0025-00104
Permit Reviewer: Ghassan Shalabi
Date: September 10, 2012

Engine Test Cells	TC 5 and TC6	TC 7 - TC13	TC 1 - TC4	TC 16 - TC18	Total
Power Range (HP)	<300	<600	<600	<1500	
No. of Test Cells	2	9	4	3	18
Max JP-8 Usage(gal/hr) per test cell	13.4	26.8	26.8	65	
Max Hours Operated per Year	8760	8760	8760	8760	
Total Heat Input Capacity (MMBtu/hr)	3.67	33.04	14.68	26.71	
Potential Throughput (MMBtu/yr) per Cell	32160	289440	128640	234000	555600
Maximum Throughput (Gal/yr) Total	234768	2112912	939072	1708200	4055880

GHG Calcs

	Emission Factor (KG/MMBtu)	Emission Factor(lb/MMBtu)
CO2	72.22	158.884
CH4	3.00E-03	6.60E-03
N2O	6.00E-04	1.32E-03

					Total
GHG Emissions (tpy)					
CO2	2554.85	22993.69	10219.42	18589.43	
CH4	0.11	96.78	0.42	0.77	
N2O	0.02	0.19	0.08	0.15	
CO2e	2557.08	25085.29	10454.05	18653.52	

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Don McCloskey
Indiana Research Institute
1402 Hutchins Avenue
Columbus, IN 47201

DATE: December 14, 2012

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Significant Source Modification
005-32257-00104

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Don Pridgen – Indiana Research Institute
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
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December 14, 2012

TO: Bartholomew County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: **Indiana Research Institute**
Permit Number: **005-32257-00104**

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	GHOTOPP 12/14/2012 Indiana Research Institute 005-32257-00104 Final		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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