

NEW SOURCE CONSTRUCTION PERMIT
and MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

Hoosier Energy Lawrence County Station
3.5 miles SE of Bedford-Northwest Quarter of section 7
Bedford, Indiana

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

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 093-14495-00028	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: March 6, 2002

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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 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary power generating facility.

Authorized Individual: Tom Bernardi
Source Address: 3.5 miles SE of Bedford-Northwest Quarter of section 7, Bedford, Indiana
Mailing Address: P.O.Box 908 Bloomington, Indiana 47402-0908
Phone Number: 812-876-0341
SIC Code: 4911
County Location: Lawrence
County Status: Attainment for all criteria pollutants
Source Status: Minor Source, under PSD;
Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

- (a) Four (4) simple cycle, dual fuel turbine generator units, identified as Turbine 1, 2, 3 and 4 each with a net generating capacity of 103 MW per turbine and a corresponding heat input capacity of 1221 MMBtu/hr, using dry low NOx emission control as control, and exhausting to stack 1, 2, 3, and 4 respectively. The primary fuel will be natural gas, with fuel oil used as a back-up.
- (b) One (1) diesel fuel storage tank, identified as #1, with a maximum capacity of 1,200,000 gallons.
- (c) One (1) emergency diesel fire pump, identified as pump 1, with a maximum capacity of 208 HP, and exhausts to stack 5.

A.3 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 an affected source under Title IV (Acid Deposition Control) of the Clean Air Act, as defined in 326 IAC 2-7-1(3);
- (c) 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).

A.4 Acid Rain Permit Applicability [40 CFR Part 72.30]

This stationary source shall be required to have a Phase II, Acid Rain permit by 40 CFR Part 72.30 (Applicability) because:

- (a) The combustion turbines are new units under 40 CR Part 72.6.

- (b) The source cannot operate the combustion units until their Phase II, Acid Rain permit has been issued.

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

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.

B.2 Definitions

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, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 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.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled "Minor Source Operating Permit", all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Minor Source Operating Permit [326 IAC 2-6.1]

This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1 when, prior to start of operation, the following requirements are met:

- (a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section.
 - (1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (2) If the Affidavit of Construction does not verify that the facilities covered in this Construction Permit were constructed as proposed in the application, then the Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section prior to beginning operation of the facilities.
- (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

- (c) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.
- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
- (e) Pursuant to 326 IAC 2-7-4(a)(1)(A)(ii) and 326 IAC 2-5.1-4, the Permittee shall apply for a Title V operating permit within twelve (12) months of the date on which the source first meets an applicability criterion of 326 IAC 2-7-2.

B.7 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.7, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and
- (d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAQ. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potential to emit nitrogen oxides (NOx), sulfur dioxide (SO2) and carbon monoxide (CO) for the facilities listed in this construction permit are greater than 250 tons per year. The potential to emit of the above listed pollutants is limited to less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase potential to emit to 250 tons per year of any regulated pollutant from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

C.2 Preventive Maintenance Plan [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 (PMP) after issuance of this permit, including the following information on each emissions unit:
 - (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;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by

326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.4 Source Modification [326 IAC 2-7-10.5]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-10.5 whenever the Permittee seeks to construct new emissions units, modify existing emissions units, or otherwise modify the source.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule.

C.5 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

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 permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;
- (c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.6 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

- (c) IDEM, OAQ, shall issue a revised permit.

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

C.7 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.8 Opacity [326 IAC 5-1]

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

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

C.9 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements

C.10 Performance Testing [326 IAC 3-6]

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.11 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.12 Maintenance of Monitoring Equipment [IC 13-14-1-13]

- (a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.
- (b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

C.13 Monitoring Methods [326 IAC 3]

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

C.14 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
- (1) This condition;

- (2) The Compliance Determination Requirements in Section D of this permit;
 - (3) The Compliance Monitoring Requirements in Section D of this permit;
 - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
 - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of :
 - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
 - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
- (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;
 - (3) An automatic measurement was taken when the process was not operating; or
 - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of

receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.16 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including malfunctions during startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.17 Annual Emission Statement [326 IAC 2-6]

- (a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:

- (1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.
- (b) The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (c) The annual emission statement 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.

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

C.18 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.19 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (a) Records of all required monitoring data and support information 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 kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. 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 written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
- (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
- (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.20 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Quarterly (*or Semi-annual if the source isn't required to do any quarterly reporting*) Compliance Monitoring Report. Any deviation from the requirements and the date(s) of each deviation must be reported. The Compliance Monitoring Report shall include the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
- (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) A malfunction as described in 326 IAC 1-6-2; or
 - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
 - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.21 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will

achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

- (d) The notification 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.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

- (a) Four (4) simple cycle, dual fuel turbine generator units, identified as Turbine 1, 2, 3 and 4 each with a net generating capacity of 103 MW per turbine and a corresponding heat input capacity of 1221 MMBtu/hr, using dry low NO_x emission control as control, and exhausting to stack 1, 2, 3, and 4 respectively. The primary fuel will be natural gas, with fuel oil used as a back-up.
- (b) One (1) diesel fuel storage tank, identified as #1, with a maximum capacity of 1,200,000 gallons.
- (c) One (1) emergency diesel fire pump, identified as pump 1, with a maximum capacity of 208 HP, and exhausts to stack 5.

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

Emission Limitations and Standards

D.1.1 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

- (a) The potential to emit NO_x from the four (4) combustion turbines (including startup and shutdown) shall be limited to less than 248.93 tons per twelve (12) consecutive months per pollutant, rolled on monthly basis. The potential to emit CO from the four (4) combustion turbines (including startup and shutdown) shall be limited to less than 249.70 tons per twelve (12) consecutive months per pollutant, rolled on monthly basis. Operating the emergency diesel fire pump shall be limited to 500 hours per year.
- (b) Compliance with these limits and limiting the operation of the emergency diesel fire pump to 500 hours per year makes 326 IAC 2-2 (Preventive of Significant Deterioration) and 40 CFR 52.21 not applicable.
- (c) The sulfur content of the fuel oil shall not exceed 0.05 percent by weight.

D.1.2 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart.

D.1.3 40 CFR Part 60, Subpart GG Applicability (Stationary Gas Turbine)

- (a) The four (4) combustion turbines are subject to 40 CFR Part 60, Subpart GG, because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.
- (b) Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the Permittee shall:
 - (1) limit nitrogen oxides emissions, as required by 40 CFR 60.332, to:

$$\text{STD} = 0.0075 \frac{(14.4)}{Y} + F,$$

where STD = allowable NO_x emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

- (2) limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight.

D.1.4 40 CFR Part 60, Subpart Kb Applicability (Volatile Organic Storage Vessels)

- (a) The one (1) fuel oil storage tank is subject to 40 CFR Part 60, Subpart Kb because the maximum capacity is greater than 40 m³ and is used to store volatile organic liquids (including petroleum) for which construction, reconstruction, or modification commenced after July 23, 1984.
- (b) Pursuant to 40 CFR Part 60, Subpart Kb, the Permittee shall notify the Administrator and IDEM, OAQ, within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. (Available data on the storage temperature may be used to determine the maximum vapor pressure as determined in 40 CFR Part 60.116b(e)(1)-(3)).

D.1.5 Sulfur Dioxide (SO₂)

Pursuant to 326 IAC 7-1.1-2 (SO₂ Emissions Limitations) the SO₂ emissions from the fuel combustion shall not exceed five tenths (0.5) pounds per MMBtu heat input.

D.1.6 Carbon Monoxide Emission Limitations [326 IAC 9-1]

This source is subject to 326 IAC 9-1 because it is a stationary source of CO emissions commencing operation after March 21, 1972. There are no applicable CO emission limits, under this state rule, established for this type of operation.

D.1.7 Preventive Maintenance Plan

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this emissions unit and its control device.

Compliance Determination Requirements

D.1.8 Testing Requirements [326 IAC 2-1.1-11]

- (a) Pursuant to 326 IAC 3-5 the Permittee shall conduct a performance test, not later than one-hundred and eighty (180) days after a facility start-up or monitor installation, on the combustion turbines' exhaust stacks (designated as stack 1, 2, 3 and 4) in order to certify the continuous emission monitoring system for NO_x and CO.
- (b) Within sixty (60) days after achieving maximum production rate, but no later than one-hundred and eighty (180) days after initial start-up, the Permittee shall conduct NO_x and SO₂ stack tests for each turbine utilizing methods as approved by the Commissioner. These tests shall be performed in accordance with 40 CFR Part 60.335 and Section C - Performance Testing, in order to document compliance with Conditions D.1.2.
- (c) IDEM may require compliance testing at any specific time when necessary to determine if the source is in compliance. If testing is required by IDEM, compliance with the NO_x and CO limits specified in Condition D.1.1, shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.9 40 CFR Part 60, Subpart GG Compliance Requirements (Stationary Gas Turbines)

Pursuant to 40 CFR Part 60, Subpart GG (Stationary Gas Turbines), the Permittee shall monitor the nitrogen and sulfur content of the natural gas on a daily basis as follows:

- (a) install a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine, as required by 40 CFR 60.334(a);
- (b) determine compliance with the nitrogen oxides and sulfur dioxide standards in 40 CFR 60.332 and 60.333(a), per the requirements described in 40 CFR 60.335(c);
- (c) determine the sulfur content of the natural gas being fired in the turbine by ASTM methods D 1072-80, D 3031-81, D 4084-82, or D 3246-81. The applicable ranges of some ASTM methods mentioned are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator;
- (d) determine the nitrogen content of the natural gas being fired in the turbine by using analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator; and
- (e) report periods of excess emissions, as required by 40 CFR 334(c).

The analyses required above may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor or any other qualified agency.

Owners, operators or fuel vendors may develop custom schedules for determination of the nitrogen and sulfur content based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the above requirements.

D.1.10 Continuous Emission Monitoring System (CEMS) [326 IAC 3-5]

- (a) Pursuant to 326 IAC 3-5-1(d)(1), the owner or operator of a new source with an emission limitation or permit requirement established under 326 IAC 2-5.1-3 and 2-6.1 shall be required to install a continuous emissions monitoring system or alternative monitoring plan as allowed under the Clean Air Act and 326 IAC 3-5.
- (b) For NO_x and CO the Permittee shall install, calibrate, certify, operate and maintain a continuous emissions monitoring system for stacks designated as 1, 2, 3 and 4, in accordance with 326 IAC 3-5-2 and 3-5-3.
 - (1) The continuous emission monitoring system (CEMS) shall measure NO_x and CO emissions rates in pounds per hour. The use of CEMS to measure and record the NO_x and CO hourly emission rates, is sufficient to demonstrate compliance with the annual limits established in the Condition D.1.1.
 - (2) The Permittee shall submit to IDEM, OAQ, within ninety (90) days after monitor installation, a complete written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.
 - (3) The Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

- (c) In instances of downtime, the source shall use EPA's AP-42 emission factors for stationary gas turbines, to demonstrate compliance with the CO emission limit and use the Missing Data Substitution Procedures outlined in 40 CFR Part 75, Subpart D to demonstrate compliance with the NO_x emission limit, established under Condition D.1.1.
- (d) The source may submit to OAQ alternative emission factors based on the source's CEMS data, to use in lieu of the AP-42 emission factors in instances of downtime. The alternative emissions factors must be approved by OAQ prior to use in calculating emissions for the limitations established in this construction permit. The alternative emission factors shall be based upon collected monitoring and test data supplied from an approved continuous emission monitoring system and/or approved performance tests. In the event that the information submitted does not contain sufficient data to establish appropriate emission factors, the source shall continue to collect data until appropriate emission factors can be established. During this period of time, the source shall continue to use AP-42 emission factors for CO and the NO_x Missing Data Substitution Procedures specified in 40 CFR Part 75, Subpart D, in periods of downtime.

D.1.11 326 IAC 7-2 [Sulfur Content Compliance]

Pursuant to 326 IAC 7-2-1, the Permittee shall demonstrate that the fuel oil sulfur content does not exceed 0.5 pounds per million Btu (lb/MMBtu) by:

- (a) Fuel sampling and analysis data shall be collected pursuant to procedures specified in 326 IAC 3-7-4 for oil combustion, and these data may be used to determine compliance or noncompliance with the emission limitations contained in 326 IAC 7-1.1. Computation of calculated sulfur dioxide emission rates from fuel sampling and analysis data shall be based on AP-42 emission factors, unless other emission factors based on site specific sulfur dioxide measurements are approved by the commissioner and the USEPA. Fuel sampling and analysis data shall be collected as follows:
 - compliance or noncompliance shall be determined by using a calendar month average sulfur dioxide emission rate in pounds per million Btu unless a shorter averaging time or alternate methodology is specified under 326 IAC 7-2. Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (i) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (ii) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (b) Compliance or noncompliance with the emission limitation specified in 326 IAC 7-1.1 may be determined by conducting a stack test for sulfur dioxide emissions from the four (4) combustion turbines, using 40 CFR 60, Appendix A, Method 6, 6A, 6C, or 8, in accordance with the procedures in 326 IAC 3-6.
- (c) Upon written notification of a facility owner or operator to the department, continuous emission monitoring data collected and reported pursuant to 326 IAC 3-5 may be used as the means for determining compliance.
- (d) A determination of noncompliance pursuant to either of the methods specified in (a), (b) or (c) above shall not be refuted by evidence of compliance pursuant to the other method.

Record Keeping and Reporting Requirements [326 IAC 2-1-3]

D.1.12 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.1 the Permittee shall maintain records of the following:
- (1) amount of natural gas combusted (in million cubic feet) and fuel oil (in gallons) per unit (turbine, heating equipment and fire pump engine) during each month;
 - (2) the percent sulfur content of the natural gas (if other than pipeline quality natural gas which is defined as natural gas that is provided by a supplier through a pipeline; 40 CFR Part 72.2) and fuel oil of each unit (turbine and fire pump engine);
 - (3) the emission rates of NO_x and CO in pounds per hour (based on CEMS data); and
 - (4) the Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner so that they may be inspected by the IDEM, OAQ, or the U.S. EPA., if so requested or required.
- (b) To document compliance with D.1.2, the source shall maintain records of the natural gas analyses, including the sulfur and nitrogen content of the gas, for a period of three (3) years.
- (c) To document compliance with Condition D.1.3, the Permittee shall:
- (1) maintain the records of the volatile organic liquid (VOL) stored;
 - (2) the period of storage;
 - (3) the maximum true vapor pressure of the volatile organic liquid (VOL) during the respective storage period; and
 - (4) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.
- (d) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

D.1.13 Reporting Requirements

- (a) The Permittee shall submit a quarterly emissions report, if applicable, based on the continuous emissions monitor (CEM) data for NO_x and CO, pursuant to 326 IAC 3-5-7. These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit. To convert the CEMS data from ppm to tons per month as requested in the report forms, the source needs to use the following formulae Pursuant to 40 CFR 75 (Appendix F):

$$E = K C_n F (20.9 / (20.9 - \% O_2))$$

Where:

E = Pollutant emissions in lb/MMBtu.

K = 1.194×10^{-7} (lb / dscf) / ppm NO_x

C_h = Hourly average pollutant concentration in ppm.
 F = a factor representing a ratio of the volume of dry flue gases generated to the caloric value of the fuel combusted.
For Oil, $F = 9,190$ (dscf / MMBtu) and For Natural gas, $F = 8,710$ (dscf / MMBtu)

The average NOx emission rate for each calendar month

$$E_m = \frac{\sum_{i=1}^n E_i}{n}$$

Where:

E_m = Monthly average NOx emission rate (lb / MMBtu)

E_i = Hourly average NOx emission rate (lb / MMBtu)

n = Number of hourly rates during calendar month

- (b) A quarterly summary of the information to document compliance with D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.
- (c) The Permittee shall report periods of excess emissions, as required by 40 CFR 60.334(c).
- (d) The Permittee shall submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate in pounds per million Btu upon request based on fuel sampling and analysis data in accordance with procedures specified under 326 IAC 3-7-4 to document compliance with D.1.10.
- (e) These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and shall be in accordance with Section C – General Reporting Requirements of this permit.

**Indiana Department of Environmental Management
Office of Air Quality
Compliance Data Section**

Quarterly Report

Company Name: Hoosier Energy Bedford Station
Location: 3.5 miles SE of Bedford-Northwest Quarter of section 7, Bedford, Indiana
Permit No.: 093-14495-00028
Source: Four (4) combustion turbines and one (1) diesel-fired engine
Pollutant: CO
Limit: Less than 250 tons per twelve (12) consecutive month period

Year: _____

Month	CO Emissions (tons/month)	Total CO emissions for previous eleven month (tons/month)	Total CO for twelve month period (tons)
1			
2			
3			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

**Indiana Department of Environmental Management
Office of Air Quality
Compliance Data Section**

Quarterly Report

Company Name: Hoosier Energy Lawrence County Station
Location: 3.5 miles SE of Bedford-Northwest Quarter of section 7, Bedford, Indiana
Permit No.: 093-14495-00028
Source: Four (4) combustion turbines and one (1) diesel-fired engine
Pollutant: NOx
Limit: Less than 250 tons per twelve (12) consecutive month period

Year: _____

Month	NOx Emissions (tons/month)	Total NOx emissions for previous eleven month (tons/month)	Total NOx for twelve month period (tons)
1			
2			
3			

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

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

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

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name: Hoosier Energy Lawrence County Station	
Address:	3.5 miles SE of Bedford-Northwest Quarter of section 7, Bedford, Indiana
City:	Bedford
Phone #:	(812) 876-2021
MSOP #:	093-14495-00028

I hereby certify that Hoosier Energy Lawrence County Station is still in operation.
 no longer in operation.

I hereby certify that Hoosier Energy Lawrence County Station is in compliance with the requirements of MSOP 093-14495-00028
 not in compliance with the requirements of MSOP 093-14495-00028

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale: _____

Mail to: Permit Administration & Development Section
Office Of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Hoosier Energy Lawrence County Station
P.O.Box 908
Bloomington, Indiana 47402-0908

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 Hoosier Energy, Lawrence County Station, 3.5 miles SE of Bedford-Northwest Quarter of section 7, Indiana, completed construction of the stationary Power generating facility on _____
in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on June 25, 2001 and as permitted pursuant to **Construction Permit No. CP-093-14495, Plant ID No. 093-00028**
issued on _____
5. I hereby certify that Hoosier Energy, Bedford Station is now subject to the Title V program and will submit a Title V (or FESOP) operating permit application within twelve (12) months from the postmarked submission date of this Affidavit of Construction.

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)

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

Addendum to the
Technical Support Document (TSD) for a New Source Construction
and Minor Source Operating Permit.

Source Background and Description

Source Name: Hoosier Energy Lawrence County Station
Source Location: 3.5 Miles SE of Bedford-Northwest Quarter of section 7
County: Lawrence
SIC Code: 4911
Permit No.: 093-14495-00028
Permit Reviewer: Ghassan Shalabi

On October 19, 2001, the Office of Air Quality (OAQ) had a notice published in the Times Mail, Bedford, stating that Hoosier Energy, Lawrence County, had applied to construct and operate a power generation plant consisting of four (4) simple cycle, dual fuel combustion turbines with a net capacity of 103 MW per turbine, one diesel fire pump and one diesel fuel storage tank.

The notice also stated that the OAQ proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the noticed informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

1. Upon further review, IDEM, OAQ revised the table of contents to reflect the current permit conditions.
2. IDEM, OAQ revised the potential to emit and the limited potential to emit and the source status tables to reflect the worst case emissions based on whichever fuel is used by the source and made the following changes to the TSD (changes are bolded and crossed out for emphasis). Appendix A was also revised to show the source of the new numbers and will be referred to as Amended Appendix A. The OAQ revisited the Air Quality Analysis and found that there were no significant changes as a result of the change in the limited potential to emit.

Emission Calculations

See **Amended** Appendix A of this document for detailed emissions calculations (4 5 pages).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions 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, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	220.74
PM-10	220.74
SO ₂	1041.80
VOC	175.41 241.37
CO	1033.23
NO _x	3259.51

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Four Turbines	< 16.86	< 16.86	< 79.56	< 13.40 < 18.43	< 64.28 < 181.35	< 248.93	< 5.8
Unpaved roads	16.34	4.08	0	0	0	0	0
Fire Pump	0.03	0.03	0.08	0.13	0.3	1.07	
Total Emissions	< 16.89	< 16.89	< 79.64	< 13.53 < 18.56	< 64.58 < 181.65	< 250	< 5.8
PSD level	250	250	250	250	250	250	

* Fugitive PM and PM10 emissions are not counted towards the limited PTE. Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New source Performance Standards that were in effect on August 7, 1980.

** Emissions from the distillate fuel storage tanks are considered negligible due to low volatility.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	16.89
PM10	16.89
SO ₂	79.64
VOC	13.53 18.43
CO	64.58 181.348
NO _x	< 250
Single HAP	3.80
Combination HAPs	5.8

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Quality (OAQ) Construction Permit Application Form Y.

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
 - (b) See attached calculations for detailed air toxic calculations (**Amended** Appendix A., 4 **5** pages).
3. IDEM, OAQ changed the source information section in all the reporting forms from Hoosier Energy Bedford Station to Hoosier Energy Lawrence County Station based on a request submitted by the source.
 4. IDEM, OAQ added the General Provisions Relating to NSPS as condition D.1.2 because this condition is applicable to the source. The remaining conditions were re-numbered accordingly.

D.1.2 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A] The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart A.

5. IDEM, OAQ also made the following change to correct a typographical error (changes are bolded and crossed out for emphasis).

D.1.13 Reporting Requirements

- (d) The Permittee shall submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate in pounds per million Btu upon request based on fuel sampling and analysis data in accordance with procedures specified under ~~326 IAC 3-3~~ 326 IAC 3-7-4 to document compliance with D.1.10.
6. On November 20, 2001, Hoosier Energy, Lawrence County submitted comments on the proposed New Source Construction and Minor Source Operating Permit. The comment and the corresponding response is as follows (changes are bolded and crossed out for emphasis):

Comment:

Condition D.1.9 Continuous Emission Monitoring System (CEMS):
In the original application, we proposed to demonstrate compliance with the 250 tpy using CEMS data. At this time, however, we request that the permit language be modified to include an option for compliance. The permit should state that demonstration with the 250 tpy CO limit will be demonstrated by the use of CEMS data or a fuel use restriction if a CEMS monitor is not installed. The fuel use restriction will be 74,940,049 gallons if distillate fuel oil is used. When using natural gas, the factor to convert from gallons of distillate fuel oil to million cubic feet of gas is 0.001164.

Response:

While the source only mentions CO in their comment, no criteria pollutant can equal or exceed the 250 ton per year threshold for any fuel combusted if the

source chooses to avoid PSD applicability. The following tables show that NOx has the largest emission factor when combusting natural gas (the primary fuel) or distillate oil (the backup fuel). Therefore by limiting the NOx emissions to less than 250 tons per year, as has been done by the OAQ, all other criteria pollutants will be less than that level. If the source were to have a distillate oil limit of 74,940,049 gallons per year, not only would the NOx exceed 250 tons per year but the SOx emissions as well would exceed 250 tons thereby requiring a PSD review of the application. Therefore, the OAQ cannot grant the request for a distillate oil limit of 74,940,049 gallons per year.

Natural Gas

	Heat Input	e-f
Pollutant	MMBtu/hr	lb/MMBtu
NOx	1221	0.0663
CO	1221	0.0483
VOC	1221	0.0018
SO2	1221	0.0006
PM/PM10	1221	0.0041

Distillate Oil

	Heat Input	e-f
Pollutant	MMBtu/hr	lb/MMBtu
NOx	1177.5	0.158
CO	1177.5	0.0408
VOC	1177.5	0.0117
SO2	1177.5	0.0505
PM/PM10	1177.5	0.0107

Source proposed limiting the fuel usage to 74,940,049 gallons per year
 Average heat value (HV) of distillate oil = 0.139 MMBtu / gallon

Pollutant	e-f	e-f * HV	lb/yr	t/yr
	lb/MMBtu	lb/gallon		
NOx	0.158	0.021962	1,645,833.326	822.91
CO	0.0408	0.0056712	425,000	212.5
VOC	0.0117	0.0016263	121,875.002	60.938
SO2	0.0505	0.0070195	526,041.674	263.02
PM/PM10	0.0107	0.0014873	7,347.33	3.67

lb/yr = e-f (lb/MMBtu) * HV (MMBtu/gallon) * Fuel usage (gallons/yr)
 t/yr = lb/yr * 1/2000 (t/lb)

To avoid PSD requirement:

If NOx = (250 – NOx emissions from fire pump) = 250 – 1.07 = 248.93 tpy
 248.93 t/yr * 2000 lb/t = 497,860 lb/yr

X gal / yr = 497,860 lb/yr / (0.139 MMBtu/gal * 0.158 lb/MMBtu)
 = 22,669,155.81 gallons of distillate oil per year.

Y scf / yr = 497,860 lb/yr / (0.0663 lb/MMBtu * 0.001020 (MMBtu/scf))
 = 7,361,961,376 scf of natural gas per year.

The permit has limited the NOx and CO emissions to less than 250 tons per year. The emissions from this type of operation can vary, depending on the fuel used, the load on the turbine, outside temperature and heat input capacity of the turbine. With a lower temperature and while burning natural gas, the NOx

emissions tend to decrease where as the carbon monoxide (CO) emissions increase. Based on the applicant's vendor supplied data, the natural gas CO emission factor changes from 0.0548 lb/MMBtu for the summer base condition to 0.0483 lb/MMBtu for the winter base condition. On the other hand, the natural gas NOx emission factor changes from 0.0329 lb/MMBtu for the summer base condition to 0.0663 lb/MMBtu for the winter base condition.

To ensure compliance with the established emissions' limitations, the source will have to continually monitor the NOx and CO emissions with a continuous emissions monitoring system (CEMS). The OAQ has been requiring all power generating project which utilize gas turbines to install NOx and CO (CEMS).

Therefore, pursuant to 326 IAC 3-5-1(d), the OAQ will retain the requirement for a NOx and CO CEMs to demonstrate compliance with the NOx and CO limits.

7. On November 09, 2001, Thomas A. Berry & Associates submitted comments on the proposed New Source Construction and Minor Source Operating Permit on behalf of Mary Ann Bottoroff. Mary Ann Bottoroff is an owner of a farm adjacent to the proposed stationary power generation facility. The summary of the comment and the corresponding response is as follows:

Comment:

Our client's farm has been in the Bottoroff family for over fifty years. It has played a major part in the life of Mary Ann Bottoroff and her sister who now own the farm through inheritance.

The proposed generating plant will ruin the Bottoroff family farm by spewing several thousand tons of pollutants into the air each year.

We have been retained to oppose the plant or to negotiate a reasonable sale price if our client's opposition fails.

The Bottoroff family strongly urges IDEM to hold public hearings on this project.

Response:

The OAQ believes that the comment is referring to the table on page 2 of 9 of the Technical Support Document (TSD) under the section entitled "Potential to Emit". This table represents the maximum uncontrolled (and unlimited) emissions that could be emitted by the plant. This is not the level of emissions that will be emitted by the source.

Pollutant	Potential To Emit (tons/year)
PM	220.74
PM-10	220.74
SO ₂	1041.80
VOC	241.37
CO	1033.23
NO _x	3259.51
HAP's Potential To Emit (tons/year)	
Formaldehyde	3.80
Others	2.00
TOTAL	5.80

To ensure that PSD requirements do not apply the applicant requested to limit all criteria pollutants to less than 250 tons per year. NOx has the largest emission factor, therefore by limiting NOx emission to less than 250 tons per year the rest of the pollutants will stay below that level. The table on page 3 of the TSD under

the section "Limited Potential to Emit" represent the maximum emissions expected to be released by the plant and are the basis for the air quality analysis performed by the OAQ. The results of the air quality analysis show all modeled impacts well below the National Ambient Air Quality Standards (NAAQS).

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Four Turbines	< 16.86	< 16.86	< 79.56	<18.43	<181.35	< 248.93	< 5.8
Unpaved roads	16.34	4.08	0	0	0	0	0
Fire Pump	0.03	0.03	0.08	0.13	0.3	1.07	
Total Emissions	< 16.89	< 16.89	< 79.64	< 18.56	< 181.65	< 250	< 5.8
PSD level	250	250	250	250	250	250	

The source can combust all natural gas, all fuel oil or any combination of the two. Generally pollutants are summed on a per pollutant basis but, from the table shown above we see that the sum of the limited emissions from the source will be less than 569.43 tons per year and not the several thousand tons mentioned in the comment.

The OAQ held a public hearing on the proposed permit on December 12, 2001 at the Bedford Public Library in Bedford Indiana.

8. The comment period was extended through December 03, 2001 after an extension request submitted by Berger & Berger Attorneys and Counselors at Law was received by the OAQ.
9. On December 03, 2001, Berger & Berger submitted comments on the proposed New Source Construction and Minor Source Operating Permit on behalf of the Plumbers and Steamfitters, U.A. Local Union No. 136 and the Building Traders Council of South Central Indiana and all of its affiliated members. The summary of the comments and corresponding responses is as follows:

Comment 1:

The draft permit limits the potential to emit NO_x and CO from the four turbines and one emergency diesel fire water pump to less than 250 tons per 12 consecutive months per pollutant, rolled on a monthly basis (Permit, condition D.1.1 (a)). Compliance would be determined using a continuous emission monitor (Permit, condition D.1.9) and results reported in pounds per hour (Permit, condition D.1.12 (a)(3)).

The condition in the draft permit designed to limit the potential to emit of CO and NO_x is not practically enforceable for the reasons set out below.

Reason (a)

The permit must contain production or operational limits. The emission caps proposed in condition D.1.1 (a) are not accompanied by any operational or production limits anywhere in the draft permit to assure that the caps can be met. Further, the draft permit does not contain any requirements that the facility curtail its operations in the event the permit levels are exceeded.

Therefore, the permit must be modified to additionally include a limit on firing rate, fuel flow, or hours of operation and requirement that the facility shutdown when the limit is reached. Alternatively, the project must be modified to require pollution controls, selective catalytic reduction for NOX and an oxidation catalyst for CO, that would limit the potential to less than 250 tons/yr.

Response (a):

A permit limitation can legally restrict potential to emit if it meets two criteria:

1) It is federally enforceable and 2) it is enforceable as a practical matter.

The comment disputes the federal enforceability of the permit condition limiting NOx emissions to less than 250 tons/yr, by claiming that it is not enforceable as a practical matter. Additionally, the comment claims that production or operational limits are needed to limit the potential to emit.

There are three types of limits, emission limits, production limits and operational limits. Emission limits are restrictions over a given period of time on the amount of a pollutant that may be emitted by the source. Production limits are restrictions on the amount of final product that can be produced at the source. Operational limits are all other restrictions on the manner in which a source is run, including hours of operation, amount of raw material consumed, fuel combusted or conditions which specify that the source must install and maintain add-on control equipment.

The Hoosier Energy permit contains emission limits (i.e. NOx and CO emissions shall be less than 250 tons annually). Production limits are not practical for a combustion turbine as the output is variable dependent on the ambient temperature. The permit requires CEMS for measuring NOx and CO. The OAQ feels this is an operational limit. The applicant will test the system and submit the tests results to IDEM to be certified. Once in operation, this system will record all data from the turbines and the source is required to maintain this data and submit it to the IDEM on a quarterly basis. Once the data is submitted to IDEM, it becomes public information where anyone concerned or interested could either visit IDEM and check the information out from the file room (located on the 12th floor of the Indiana Government Center - North) or call in and request copies of the data be sent to their home address (there is a copy surcharge associated with this method).

Thus the permit condition limiting NOx and CO to less than 250 tons annually is enforceable as a practical matter.

As explained in the response to the previous comment limiting the NOx emissions to less than 250 tpy will also limit the emissions of the rest of the pollutants to less than 250. The source can combust all natural gas, all fuel oil or any combination of the two. The 250 tpy NOx emission limit can not be achieved without limiting the fuel usage by the source. Therefore, the fuel usage is implicitly limited for the source to be able to avoid PSD requirements. The source is required to submit quarterly NOx emissions data and annually an emission statement for all criteria pollutants. The source is also required to keep record of the amount of natural gas combusted (in million cubic feet) and fuel oil (in gallons) per unit (turbine, heating equipment and fire pump engine) during each month.

The limited potential to emit is a binding requirement. The OAQ will take appropriate enforcement action if the source violates a permit condition. This may include penalties of up to \$25,000 per day for each unit violating the permit

condition. The OAQ may also require the permittee to obtain PSD permit. If a permittee continues to knowingly violate the permit limitations, then the permittee could be faced with criminal penalties.

Reason (b):

The potential to emit NO_x while firing oil is 3,259.51. To meet this limit while operating the fire pump for 500 hours would restrict operation of the four turbine to a total; 669 hours per year. Alternatively, the potential to emit CO when firing gas is 1,033.23 tons per year. To meet this limit while operating the fire pump for 500 hours would restrict operation of the four turbines to a total of only 2,117 hours. This is clearly not a financially viable investment as the applicant could not recover the cost of the turbines over the lifetime of the project.

It is evident that the applicant intends to operate the turbines at major source levels and is merely proposing a minor source to circumvent the preconstruction review requirements of PSD.

We urge IDEM to reject the applicant request for a minor source permit, based on the fact that it would be financially untenable to build and operate the plant in compliance with the permit, and to require the project to undergo PSD preconstruction review.

Response (b):

Hoosier Energy has always described the project as a simple-cycle combustion turbine peaking facility. A peaking plant historically runs on the hotter days of the year during periods of high electricity demand. A peaking combustion turbine rarely runs more than 3000 hours per year. The OAQ has no reason to believe that Hoosier Energy intends to operate the plant as anything other than a peaking plant.

The Office of Air Quality (OAQ) has no regulatory authority in regards to the source's expense and profits. However, the permit does require continuous monitoring of emissions to ensure that such emissions do not exceed the limits established in the permit. IDEM limited the operation of the fire pump to 500 hours per year. IDEM also included the emissions from the fire pump in calculating the PTE, the limited PTE, required the applicant to keep record of the fuel consumption of the four turbines and the fire pump (condition D.1.12 (a)(1)) and required the applicant to report the CO and NO_x emissions on quarterly basis including the emissions from the fire pump. IDEM decided to make the following changes to condition D.1.1 to deduct CO and NO_x emissions of the fire pump from the plant wide limits of 250 tons per year:

- (a) The potential to emit NO_x ~~and CO~~ from the four (4) combustion turbines (including startup and shutdown) ~~and the one (1) emergency diesel fire pump~~ shall be limited to less than ~~250~~ **248.93** tons per twelve (12) consecutive months per pollutant, rolled on monthly basis. **The potential to emit CO from the four (4) combustion turbines (including startup and shutdown) shall be limited to less than 249.70 tons per twelve (12) consecutive months per pollutant, rolled on monthly basis.** Operating the emergency diesel fire pump shall be limited to 500 hours per year.
- (b) Compliance with these limits **and limiting the operation of the emergency diesel fire pump to 500 hours per year** makes 326 IAC 2-2 (preventive of Significant Deterioration) and 40 CFR 52.21 not applicable.

Any change or modification which may increase potential to emit to 250 tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

The Office of Air Quality (OAQ) coordinates and exchanges application information with the IURC to obtain any additional needed information and to check for any circumvention of PSD requirements.

Reason (c):

The proposed NO_x and CO limits are inconsistent with monitoring and reporting requirements. The potential to emit is limited to "less than 250 tons per twelve (12) consecutive months per pollutant, rolled on a monthly basis (permit, condition D.1.1 (a)). However, the monitoring and reporting provisions only require that emission rate in pounds per hour be measured and reported (Permit, conditions D.1.9 (b) and D.1.1 (a)(3)).

The draft permit must be modified to explain how tons per year rolled on a monthly basis would be calculated and to require that this calculation be made, reported to IDEM, and used to demonstrate compliance. Alternatively, the annual caps in condition D.1.1 (a) should be replaced with limits established as pounds per hour.

Response (c):

There is no state rule limiting the short term (lb/hr) emissions for this project. The only applicable regulatory requirement is that the source emissions stay below the threshold which triggers PSD. This threshold is an annual limit thus condition D.1.1 is an annual limit.

The OAQ will however add the equation for converting pounds per hour to tons per year. Condition D.1.12 is revised as follows:

Condition D.1.12 is changed as follows:

D.1.12 13 Reporting Requirements

- (a) The Permittee shall submit a quarterly excess emissions report, if applicable, for NO_x (based on CEMS data) and CO, pursuant to 326 IAC 3-5-7. These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.

To convert the CEMS data from pounds per hour to tons per year as requested in the report forms, the source needs to use the following formulae Pursuant to 40 CFR 75 (Appendix F):

$$E = K C_h F (20.9 / (20.9 - \% O_2))$$

Where:

E = Pollutant emissions in lb/MMBtu.

K = 1.194×10^{-7} (lb / dscf) / ppm NO_x

C_h = Hourly average pollutant concentration in ppm.

F = a factor representing a ratio of the volume of dry flue gases generated to the caloric value of the fuel combusted.

For Oil, F= 9,190 (dscf / MMBtu) and For Natural gas, F = 8,710 (dscf / MMBtu)

The average NO_x emission rate for each calendar month

$$E_m = \frac{\sum_{i=1}^n E_i}{n}$$

Where:

E_m = Monthly average NOx emission rate (lb / MMBtu)

E_i = Hourly average NOx emission rate (lb / MMBtu)

n = Number of hourly rates during calendar month

Reason (d):

The proposed annual emission cap on NOx and CO, rolled on a monthly basis, is additionally problematic because it does not allow determination of compliance until after the first year of operation has lapsed because of 12 month data are required to calculate the annual average.

The permit must be modified to establish separate NOx and CO limits that would only apply during the first year of operation. Alternatively, we recommend that condition D.1.1 (a) be modified to require monthly compliance rolled over available record, during the first year.

Response (d):

The source is required to report the NOx and CO emissions quarterly. This reporting requirement will enable IDEM to determine whether the source is in compliance with the emission limits stated in the permit without the need to wait for 12 months. If the source reaches or becomes close to reaching these limits in any quarter, IDEM will be able to recognize that and will take the appropriate measures.

Reason (e):

Short-term limits should be required. The proposed NOx and CO limits are unenforceable as a practical matter because they only limit emissions on an annual basis. To be enforceable as a practical matter, a condition designed to limit potential to emit should include a compliance monitoring period that is as short as possible. Therefore, the permit should be modified to require that the annual average be rolled on a daily basis, or to replace the annual cap with an hourly limit.

Response (e):

As mentioned earlier the OAQ feels that the permit conditions limiting NOx and CO to less than 250 tons annually are enforceable as a practical matter. To include a short term limit in the permit for NOx and CO emissions would create an enforcement issue as the source would not have violated any state rules by exceeding the short term limit when the annual limits are being met.

The only limit that is applicable to the source is the 250 tons per year. The source is required to install NOx and CO (CEMS) and report the NOx and CO emissions quarterly, in addition to the annual emission statement. Therefore, IDEM doesn't not see the need for the additional short-term limits.

Comment 2:

Startup/shutdown emissions are improperly excluded. The four turbines would be operated in simple cycle mode as a peaking facility. This means the turbines will experience a large number of startups and shutdowns. Turbines are designed to run efficiently at full load. At lower loads, and during startups and shutdowns, turbines are extremely inefficient. Based on analysis of similar projects, toxic emissions during startups and shutdowns are high enough to pose a significant health hazard to nearby residents and workers. Startup and shutdown emissions are higher than those that occur during full load and should

be included in the potential to emit calculations because they are part of the normal operation of the source. Thus, the permit should be modified to define startup and shutdown and to include specific emission limits during these periods. The language in condition C.16 (a) should be modified to make it clear that startup and shutdown emissions are not malfunctions. The emission caps in condition D.1.1 (a) should be modified to clarify that they include startups and shutdowns.

Response 2:

Condition C.16 (a) is not intended to require the source to keep records of startups and shutdowns nor is it saying that a startup or shutdown is a malfunction. It requires record keeping of malfunctions that occur during startups and shutdowns. Condition C.16 (a) will be changed, so there is no misunderstanding, as follows:

C.16 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including **malfunctions during** startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

To clarify that the emission limits include startups and shutdown condition D.1.1 will be changed as follows:

Emission Limitations and Standards

D.1.1 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

The potential to emit NO_x and CO from the four (4) combustion turbines (**including startup and shutdown**) and the one (1) emergency diesel fire pump shall be limited to less than 250 tons per twelve (12) consecutive months per pollutant, rolled on monthly basis. Operating the emergency diesel fire pump shall be limited to 500 hours per year.

Comment 3:

Indiana regulations and laws as well as federal regulations require the draft permit to be rejected in its present form. The Indiana regulations at 326 IAC 2-2-3 (a) require the owner or operator to use the best available control technology for each pollutant subject to regulation under the clean air act. Indiana requires that air pollution in this state be controlled to protect the public health. The policy is contained under the regulations for Air Pollution Control Board. The Indiana Code at 13-7-1-1 requires that permits for emission of air pollutants in Indiana be reviewed and ultimately issued with the goal to protect the public health of the citizens of the state of Indiana. Unless the emissions from this facility are properly limited through federally enforceable permit conditions public health will be threatened by excessive emissions which pose serious hazard to the health of the citizens of Indiana.

Response 3:

This permit is issued pursuant to State Rule 326 IAC 2-5.1-3 (Construction of New Source). It is not issued pursuant to the federal prevention of significant deterioration requirements as delegated to the State of Indiana and listed under 326 IAC 2-2 (Prevention of Significant Deterioration). Therefore, the use of the best available control technology is not required from the owner or operator of the source. The air quality analyses conducted demonstrates that air quality in

the vicinity of the plant will continue to comply with the National Ambient Air Quality Standards (NAAQS). The OAQ utilizes a computer model, which is approved by the USEPA, to predict what impact the emissions from the plant will have on the air the community breathe and compares them to the standards that are established to protect human health. Based on the air quality analysis, no significant impact on public health or welfare is expected to occur as a result of the emissions from the proposed facility. In addition, this plant's emissions for NOx will be continuously monitored. The records of the emissions will be required to be maintained and submitted to the OAQ on a quarterly basis and available to the public. The OAQ feels that its decision on the permit is protective to the public health and the environment.

10. On December 12, 2001, a public hearing was held for the Hoosier Energy, Lawrence County station new source construction and operating permit. Comments were presented by Roger Kent, president of South Central Indiana Building and Trades Council, and Danny Arnold, a resident of Orange county and the general manager of the Orange County Rural Electric Membership Corporation. Both comments were in favor of the project.

Combustion Turbine Potential to Emit- Before Controls

Heat input: 1,221 MMBtu/hr
 Number of Turbines 4

Combustion Turbine-Natural Gas

Pollutant	Heat Input MMBtu/hr	e-f lb/MMBtu	Lb/hr	PTE tons/yr	Total PTE tons/yr
NOx	1221	0.0663	80.95	354.57	1418.28
CO	1221	0.0483	58.97	258.31	1033.23
VOC	1221	0.0018	2.20	9.63	38.51
SO2	1221	0.0006	0.73	3.21	12.84
PM/PM10	1221	0.0041	5.01	21.93	87.71

Emission factors for CO, NOx, PM and VOC are vendor specification
 PTE= Heat input (MMBtu/hr)*Emission Factors (lb/MMBtu)*8760 hr/yr / 2000 lb/ton
 Emission factors for SO2 is from AP-42. SO2 (lb/MMBtu) = 0.94 * Sulfur content(%)

Heat input: 1177.5
 Number of Turbines 4

Combustion Turbine-Distillate Oil

Pollutant	Heat Input MMBtu/hr	e-f lb/MMBtu	Lb/hr	PTE tons/yr	Total PTE tons/yr
NOx	1177.5	0.158	186.05	814.88	3259.51
CO	1177.5	0.0408	48.04	210.42	841.70
VOC	1177.5	0.0117	13.78	60.34	241.37
SO2	1177.5	0.0505	59.46	260.45	1041.80
PM/PM10	1177.5	0.0107	12.60	55.18	220.74

Emission factors for Co, NOx, PM and VOC are vendor specification
 PTE= Heat input (MMBtu/hr)*Emission Factors (lb/MMBtu)*8760 hr/yr / 2000 lb/ton
 Emission factors for SO2 is from AP-42. SO2 (lb/MMBtu) = 1.01 * Sulfur content(%)

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Worst case emissions

Pollutant	Total PTE tons/yr
NOx	3259.51
CO	1033.23
VOC	241.37
SO2	1041.8
PM/PM10	220.74

Diesel Fire Pump

	e-f in Lb/hr	Emissions t/yr
NOx	4.28	1.07
CO	1.19	0.3
VOC	0.52	0.13
SO2	0.3	0.08
PM	0.11	0.03

Max hrs of operation=500 hrs/yr
 Emission factors are vendors specification

Limited Emissions

Distillate fuel

Source proposed limiting the fuel usage to 71,230 K gallons per year
 Average heat value of distillate oil = 0.139 MMBtu / gallons

Pollutant	e-f lb/MMBtu	e-f * HV lb/gallon	lb/yr	t/yr
NOx	0.158	0.021962	1564353	782.1766
CO	0.0408	0.005671	403959.6	201.9798
VOC	0.0117	0.001626	115841.3	57.92067
SO2	0.0505	0.00702	499999	249.9995
PM/PM10	0.0107	0.001487	105940.4	52.97019

$lb/yr = e-f (lb/MMBtu) * HV (MMBtu/gallons) * fuel\ usage (gallons /yr)$

$t/yr = lb/yr * 1 t / 2000 lb$

This limit reduced the SO2 emissions to less than 250 t/yr but the NOx emissions are 782.1766 t/yr

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To avoid PSD requirement

If NOX = (250 - NOx emissions from fire pump) = 250-1.07=248.93 tons per year

248.93 t/yr * 2000 lb / t = 497,860 lb / yr

$$\text{X gallon /yr} = \frac{497,860 \text{ lb / yr}}{0.139 \text{ MMBtu / gallon} * 0.158 \text{ lb / MMBtu}} = 22,669,155.81 \text{ gallons per year of Diesel fuel}$$

Pollutant	e-f	e-f * HV	lb/yr	t/yr
	lb/MMBtu	lb/gallon		
NOx	0.158	0.021962	497860	248.93
CO	0.0408	0.005671	128561.3	64.28066
VOC	0.0117	0.001626	36866.85	18.43342
SO2	0.0505	0.00702	159126.1	79.56307
PM/PM10	0.0107	0.001487	33715.84	16.85792

lb/yr = e-f (lb/MMBtu) * HV (MMBtu/gallons) * fuel usage (gallons /yr)

t/yr = lb/yr * 1 t / 2000 lb

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Y scf / yr =

$$\frac{497,860 \text{ lb / yr}}{0.001020 \text{ MMBtu / scf} * 0.0663 \text{ lb / MMBtu}}$$

= 7,361,961,376 scf per year of natural gas

Heat value = 0.001020 MMBtu/scf

Pollutant	e-f	e-f * HV	lb/yr	t/yr
	lb/MMBtu	lb/scf		
NOx	0.0663	0.000067	497860	248.93
CO	0.0483	0.00005	362694.4	181.347
VOC	0.0018	1.84E-06	13516.56	6.758281
SO2	0.0006	6E-07	4505.52	2.253
PM/PM10	0.0041	0.000004	30787.72	15.393

lb/yr = e-f (lb/MMBtu) * HV (MMBtu/scf) * fuel usage (scf /yr)

t/yr = lb/yr * 1 t / 2000 lb

Worst case limited emissions

Pollutant	t/yr
NOx	248.93
CO	181.347
VOC	18.43342
SO2	79.56307
PM/PM10	16.85792
Total	545.1314

lb/yr = e-f lb/MMBtu) * HV (MMBtu/scf) * fuel usage (scf/yr)

t/yr = lb/yr * 1 t / 2000 lb

	HAPs Natural Gas				Distillate Fuel			
	Heat Input MMBtu/hr	E-f lb/MMBtu	PTE lb/hr	PTE ton/year	Heat Input MMBtu/h	E-f lb/MMBtu	PTE lb/hr	PTE tons/year
Acetaldehyde	1221	4.00E-05	4.88E-02	2.14E-01	1177.5	N/A	N/A	N/A
Acrolien	1221	6.40E-06	7.81E-03	3.42E-02	1177.5	N/A	N/A	N/A
Benzene	1221	1.20E-05	1.47E-02	6.42E-02	1177.5	5.50E-05	6.48E-02	2.84E-01
1,3-Butadiene	1221	N/A	N/A	N/A	1177.5	1.60E-05	1.88E-02	8.25E-02
Ethylbenzene	1221	3.20E-05	3.91E-02	1.71E-01	1177.5	N/A	N/A	N/A
Formaldehyde	1221	7.10E-04	8.67E-01	3.80E+00	1177.5	2.80E-04	3.30E-01	1.44E+00
Napthalene	1221	1.30E-06	1.59E-03	6.95E-03	1177.5	3.50E-05	4.12E-02	1.81E-01
PAH	1221	2.20E-06	2.69E-03	1.18E-02	1177.5	4.00E-05	4.71E-02	2.06E-01
Toluene	1221	1.30E-04	1.59E-01	6.95E-01	1177.5	N/A	N/A	N/A
Xylene	1221	6.40E-05	7.81E-02	3.42E-01	1177.5	N/A	N/A	N/A
Total				5.34E+00				2.20E+00

Emission Factors are from AP42 (final, 4/00), Table 3.1-3.

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

Limited HAP Emissions (tons/yr) = Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu) * 426 hr/yr / 2,000 lb/ton

Worst case

Acetaldehyde	2.14 E-01
Acrolien	3.42E-02
Benzene	2.84E-01
1,3-Butadiene	8.25E-02
Ethylbenzene	1.71E-01
Formaldehyde	3.80E+00
Napthalene	1.81E-01
PAH	2.06E-01
Toluene	6.95E-01
Xylene	3.42E-01
Total	5.80E+00

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Minor Source Operating Permit

Source Background and Description

Source Name: Hoosier Energy Lawrence County Station
 Source Location: 3.5 miles SE of Bedford-Northwest Quarter of section 7, Bedford, Indiana
 County: Lawrence
 SIC Code: 4911
 Operation Permit No.: 093-14495-00028
 Permit Reviewer: Ghassan Shalabi

The Office of Air Quality (OAQ) has reviewed an application from Hoosier Energy Lawrence County Station relating to the construction and operation of a stationary power generation facility.

New Emission Units and Pollution Control Equipment

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

- (a) Four (4) simple cycle, dual fuel turbine generator units, identified as Turbine 1, 2, 3 and 4 each with a net generating capacity of 103 MW per turbine and a corresponding heat input capacity of 1221 MMBtu/hr, using dry low NO_x emission control as control, and exhausting to stack 1, 2, 3, and 4 respectively. The primary fuel will be natural gas, with fuel oil used as a back-up.
- (b) One (1) diesel fuel storage tank, identified as #1, with a maximum capacity of 1,200,000 gallons.
- (c) One (1) emergency diesel fire pump, identified as pump 1, with a maximum capacity of 208 HP, and exhausts to stack 5.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	Turbine 1	52	9 X 19	1,622,149	1100
2	Turbine 2	52	9 X 19	1,622,149	1100
3	Turbine 3	52	9 X 19	1,622,149	1100
4	Turbine 4	52	9 X 19	1,622,149	1100
5	Diesel Fire Pump			953	815

Recommendation

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

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

A complete application for the purposes of this review was received on June 14, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (4 pages).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions 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, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	220.74
PM-10	220.74
SO ₂	1041.80
VOC	175.41
CO	1033.23
NO _x	3259.51

HAP's	Potential To Emit (tons/year)
Formaldehyde	3.80
Others	2.00
TOTAL	5.80

The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM, PM-10, SO₂, VOC, CO and NO_x are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. Until the Permittee applies for a Title V operating permit, the Permittee is subject to 326 IAC 2-6, and will be issued a New Source Construction and Minor Source Operating Permit.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Four Turbines	< 16.86	< 16.86	< 79.56	< 13.40	< 64.28	< 248.93	< 5.8
Unpaved roads	16.34	4.08	0	0	0	0	0
Fire Pump	0.03	0.03	0.08	0.13	0.3	1.07	
Total Emissions	< 16.89	< 16.89	< 79.64	< 13.53	< 64.58	< 250	< 5.8
PSD level	250	250	250	250	250	250	

* Fugitive PM and PM10 emissions are not counted towards the limited PTE Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New source Performance Standards that were in effect on August 7, 1980.

** Emissions from the distillate fuel storage tanks are considered negligible due to low volatility.

To insure compliance with the established emission limitations, the source will be required by the permit to continually monitor the emissions with a continuous emissions monitoring system (CEMS). This monitoring will read in 15-minute intervals. The system will be tested, to insure proper installation, by IDEM. Once in operation, the system will record all data from the turbines and the source is required to maintain this data and submit it to IDEM on a quarterly basis. Once the data is submitted to IDEM, it becomes public information where anyone concerned or interested could obtain the CEMS data. Since the largest emissions rate is from NO_x, the limit will be based on NO_x. By limiting the NO_x emissions below 250 tons/year, all pollutants will be less than the PSD threshold level. The table shown above indicates the corresponding limited PTE of the rest of the pollutants when NO_x is limited to less than 250 tons per year.

County Attainment Status

The source is located in Lawrence County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Lawrence 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 and 40 CFR 52.21.
- (b) Lawrence County has been classified as attainment or unclassifiable for PM-10, SO₂, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter PM and PM-10 emissions are not counted toward determination of PSD.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	16.89
PM10	16.89
SO ₂	79.64
VOC	13.53
CO	64.58
NO _x	< 250
Single HAP	3.80
Combination HAPs	5.8

This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) at least one of the criteria pollutant is greater than or equal to 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is greater than or equal to 10 tons per year, or
- (c) any combination of HAPs is greater than or equal to 25 tons/year.

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

- (a) 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines)
 The four (4) dual fuel turbine generator units are subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60, Subpart GG) because the heat input at peak load is equal or greater than 10.7 gigajoules per hour (10 MMBtu per hour), based on the lower heating value of the fuel fired.

Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the Permittee shall:

- (1) Limit nitrogen oxides emissions to 0.0092 % by volume at 15% oxygen on a dry basis, as required by 40 CFR 60.332, to:

$$STD = 0.0075 \frac{(14.4)}{Y} + F,$$

where STD = allowable NO_x emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load

for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

- (2) Limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight;
- (3) Install a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine, as required by 40 CFR 60.334(a);
- (4) Monitor the sulfur content and nitrogen content of the fuel being fired in the turbine, as required by 40 CFR 60.334(b).
- (5) Report periods of excess emissions, as required by 40 CFR 334(c).

The owner, operator, or fuel vendor may develop a custom fuel schedule for determination of the nitrogen and sulfur content based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom fuel schedules shall be approved by the Administrator before they can be used to comply with the above requirements.

- (b) 40 CFR Part 60, Subpart Kb (Volatile Organic Storage Vessels):
The source's one (1) tank is subject to 40 CFR Part 60, Subpart Kb because the maximum capacity is greater than 40 m³ and is used to store volatile organic liquids (including petroleum) for which construction, reconstruction, or modification commenced after July 23, 1984.

Pursuant to 40 CFR Part 60, Subpart Kb, the Permittee shall:

- (1) maintain the records of the volatile organic liquid (VOL) stored;
 - (2) the period of storage;
 - (3) the maximum true vapor pressure of the volatile organic liquid (VOL) during the respective storage period;
 - (4) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel;
 - (5) shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. (Available data on the storage temperature may be used to determine the maximum vapor pressure as determined in 40 CFR Part 60.117b(e)(1)-(3))
- (c) This source is subject to the requirements of 40 CFR Part 72-80 (Acid Rain Program). The requirements of this program shall be detailed in the Phase II, Acid Rain Permit.
 - (d) There are no other New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.
 - (e) There are no NESHAP 40CFR Part 63 applicable to this facility

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance):

- (a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after commencement of operation, including the following information on each:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission units;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM and OAQ upon request and shall be subject to review and approval by IDEM and OAQ.

326 IAC 1-7 (Stack Height Provisions):

Stacks designated as criteria pollutants are subject to the requirements of 326 IAC 1-7 (Stack Height Provisions) because the potential emissions which exhaust through stacks G1CT1S1 - G8CT2S2, are greater than 25 tons per year of PM . This rule requires that the stack be constructed using Good Engineering Practice (GEP), unless field studies or other methods of modeling show to the satisfaction of IDEM that no excessive ground level concentrations, due to less than adequate stack height, will result.

326 IAC 2.4-1.1 (New Source Toxics Control):

- (a) Any single HAP's potential to emit shall be less than ten (10) tons per twelve (12) consecutive month period, rolled on a monthly basis.
- (b) The combination of HAPs shall be less than twenty-five (25) tons per twelve (12) consecutive month period, rolled on a monthly basis.

Therefore, the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control) do not apply.

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

- (a) The potential to emit of NOx and CO from the four (4) combustion turbines shall be limited to less than 250 tons per twelve (12) consecutive months per pollutant, rolled on a monthly basis. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply. By limiting NOx and CO emissions to less than 250 tons per year, the SO2, PM, PM10 and VOC emissions are also less than 250 tons per year.
- (b) The source shall be required to install a continuous emissions monitoring system in accordance with 326 IAC 3-5, to demonstrate compliance with the above mentioned NOx and CO limits.
- (c) If the Permittee ever elects to relax the potential to emit limitation such that the PSD rules apply, the Permittee would be required, at a minimum, to install a control which would meet the value considered BACT at this time or install add-on controls which would meet the BACT value. For example, the Permittee is installing turbines that have been guaranteed by the vendor to meet a NOx emission rate of 25 ppm, but permits for similar units have recently been permitted with BACT value set at 9 ppm. Therefore, at

a minimum, the Permittee would be required to meet the most current BACT value for similar sources as determined on a case by case basis.

- (d) The sulfur content of the fuel oil shall not exceed 0.05 percent by weight.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than one hundred (100) tons per year of PM, PM-10, SO₂, VOC, CO and NO_x. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by July 1 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary 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%) 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.

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

The proposed electric generation plant is not subject to the requirements of 326 IAC 6-2 because the combustion turbines are not used as a source of indirect heating.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on August 27, 2001.

This plan consists of paving most of the roads throughout the plant.

No other 326 IAC 6 rules apply.

326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations):

- (a) Pursuant to 326 IAC 7-1.1-2, sulfur dioxide emissions from fuel combustion facilities shall be limited to five-tenths (0.5) pounds per million Btu for distillate oil combustion.
- (b) Pursuant to 326 IAC 7-2-1, owners or operators of sources or facilities subject to 326 IAC 7-1.2, shall submit to the Commissioner the following reports based on fuel sampling and analysis data in accordance with procedures specified under 326 IAC 3-3:
- (1) Shall submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate in pounds per million Btu upon request.

- (c) Pursuant to 326 IAC 7-2-1, the Permittee shall demonstrate that the fuel oil sulfur content does not exceed 0.5 pounds per million Btu by:
- (1) Fuel sampling and analysis data shall be collected pursuant to procedures specified in 326 IAC 3-7-4 for oil combustion, and these data may be used to determine compliance or noncompliance with the emission limitations contained in 326 IAC 7-1.1. Computation of calculated sulfur dioxide emission rates from fuel sampling and analysis data shall be based on AP-42 emission factors, unless other emission factors based on site specific sulfur dioxide measurements are approved by the commissioner and the USEPA. Fuel sampling and analysis data shall be collected as follows:
 - (A) compliance or noncompliance shall be determined by using a calendar month average sulfur dioxide emission rate in pounds per million Btu unless a shorter averaging time or alternate methodology is specified under 326 IAC 7-2. Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (i) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (ii) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling
 - (2) Compliance or noncompliance with the emission limitation specified in 326 IAC 7-1.1 may be determined by conducting a stack test for sulfur dioxide emissions from the sixteen (16) combustion turbines, using 40 CFR 60, Appendix A, Method 6, 6A, 6C, or 8, in accordance with the procedures in 326 IAC 3-6.
 - (3) Upon written notification of a facility owner or operator to the department, continuous emission monitoring data collected and reported pursuant to 326 IAC 3-5 may be used as the means for determining compliance.

A determination of noncompliance pursuant to either of the methods specified in (1), (2) or (3) above shall not be refuted by evidence of compliance pursuant to the other method.

326 IAC 8-1-6 (New facilities; general reduction requirements):

Pursuant to 326 IAC 8-1-6 (New facilities; general reduction requirements), the requirements of BACT do not apply because the limited potential to emit of VOC of each turbine is less than 25 tons per year per unit. Based on the NOx emission limit, the limited VOC emissions are less than 25 tons per year per turbine. Compliance with the NOx emission limit will demonstrated by the use of a continuous emissions monitoring system.

326 IAC 9 (Carbon Monoxide Emission Limits):

Pursuant to 326 IAC 9 (Carbon Monoxide Emission Limits), the source is subject to this rule because it is a stationary source which emits CO emissions and commenced operation after March 21, 1972. Under this rule, there is not a specific emission limit because the source is not an operation listed under 326 IAC 9-1-2.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Quality (OAQ) Construction Permit Application Form Y.

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations (Appendix A., 4 pages).

Air Quality Impacts From Minor Sources – Modeling Study

Modeling Overview

IDEM, OAQ, has conducted a modeling analysis of the Limited Potential to Emit (PTE) criteria pollutants and Hazardous Air Pollutants (HAPs) from this proposed source to:

- (a) Estimate whether or not the Limited PTE criteria pollutants will exceed the National Ambient Air Quality Standards (NAAQS), and
- (b) Compare the Limited PTE HAPs to the US EPA's 1996 National Air Toxics Assessment (NATA) / Cumulative Exposure Project (CEP) values for evaluating air toxics emissions.

For certain HAPs, there is not a NATA/CEP value available; therefore, emissions levels from these pollutants were compared to the Occupational Safety and Health Administration's (OSHA) 8-hour Permissible Exposure Limit (PEL).

Please note that the NATA/CEP and PEL values are not regulatory limits used by IDEM, OAQ; however, they provide a useful indication of a source's impact on public health.

Modeling Results – Criteria Pollutants

The modeling results indicate that the Limited PTE criteria pollutants from this source will not exceed the National Ambient Air Quality Standards (NAAQS).

Modeling Results – Hazardous Air Pollutants

The modeling results indicate that the Limited PTE HAPs from this source do not exceed the 1996 NATA/CEP values.

NOTE: For Formaldehyde there was not an appropriate NATA/CEP value to compare modeling results to; therefore, the results were compared to the PEL. IDEM, OAQ determined that the Limited PTE for Formaldehyde do not exceed five-tenths of a percent (0.5%) (the actual percentage is 0.0029%) of the PEL.

Conclusion

The construction and operation of this stationary power generation facility shall be subject to the conditions of the attached proposed New Source Construction and Minor Source Operating Permit 093-14495-00028.

Appendix B Air Quality Analysis

Introduction

Hoosier Energy has applied for a construction permit to construct and operate an electric generating facility near Bedford in Lawrence County, Indiana. The site is located at Universal Transverse Mercator (UTM) coordinates 547761.0 East and 4294595.0 North. The proposed facility would consist of four (4) dual-fuel turbine generator units. Lawrence County is designated as attainment for the National Ambient Air Quality Standards. These standards for Nitrogen Dioxide (NO₂), Sulfur Dioxide (SO₂), Carbon Monoxide (CO) and Particulate Matter less than 10 microns (PM₁₀) are set by the United States Environmental Protection Agency (U.S. EPA) to protect the public health and welfare.

The permit application was received by the Office of Air Quality (OAQ) on June 14, 2001. Due to public interest in electric generating facilities, an air quality analysis was performed. This document provides OAQ's Air Quality Modeling Section's review of the construction permit application including an air quality analysis performed by the OAQ.

Air Quality Analysis Objectives

The OAQ review of the air quality impact analysis portion of the permit application will accomplish the following objectives:

- A. Establish which pollutants require an air quality analysis based on source emissions.
- B. Determine the ambient air concentrations of the source's emissions and provide analysis of actual stack height with respect to Good Engineering Practice (GEP).

Summary

Hoosier Energy has applied for a minor source operating permit to construct and operate a electric generating facility, near Bedford in Lawrence County, Indiana. Lawrence County is currently designated as attainment for all criteria pollutants. Emission rates of three pollutants (NO₂, PM₁₀, and SO₂) associated with this minor source exceed Prevention of Significant Deterioration (PSD) significant emission rates established in state and federal law. Therefore, these pollutants will be analyzed by air quality modeling. Modeling results taken from the Industrial Source Complex Short Term (ISCST3) model showed pollutant impacts are predicted to be less than the significant impact levels and significant monitoring de minimis levels for purposes of an air quality analysis. All impacts are well below the NAAQS. The results for these analyses indicate that a minimum 20 feet tall stack would be necessary for the diesel fire pump to keep the facility from exceeding the significant impact levels for SO₂.

Part A - Pollutants Analyzed for Air Quality Impact

Significant emission levels for each pollutant are defined in 326 IAC 2-2-1. CO, NO_x, SO₂, VOCs and PM₁₀ will be emitted from Hoosier Energy and an air quality analysis is required for and SO₂, NO_x, and PM₁₀ all of which exceed their significant emission rates as shown in Table 1. An ozone impact analysis was not conducted because neither NO_x nor VOC potential emissions exceed 250 tons and Lawrence County is in attainment for ozone. Hazardous Air Pollutants (HAPS) will also be emitted from the proposed facility but no single pollutant has a limited potential to emit of greater than 10 tons and the combined total for all HAPS is less than 25 tons. It should be noted that all emissions are based on limitations resulting from the OAQ review of the application.

TABLE 1 – Hoosier Energy PSD Significant Emission Rates (tons/yr)		
<u>Pollutant</u>	<u>Maximum Allowable Emissions</u>	<u>Significant Emission Rate</u>
CO	64	100.0
NO _x	249	40.0
SO ₂	80	40.0
PM ₁₀	17	15.0
VOC (ozone)	45	40.0

Significant emission rates are established to determine whether a source is required to conduct an air quality analysis. If a source exceeds the significant emission rate for a pollutant, air dispersion modeling is our policy for that specific pollutant. A modeling analysis for each pollutant is conducted to determine whether the source's modeled concentrations would exceed significant impact levels. If modeled concentrations are below significant impact levels, no further air quality modeling is required. Modeled concentrations exceeding the significant impact levels are required to conduct more refined modeling which would include source inventories and background data. These procedures are defined in AGuidelines for Air Quality Maintenance Planning and Analysis, Volume 10, Procedures for Evaluating Air Quality Impacts of New Stationary Sources@October 1977, U.S. EPA Office of Air Quality Planning and Standards (OAQPS).

Part B - Significant Impact Analysis

An air quality analysis, including air dispersion modeling, was performed to determine the maximum concentrations of the source emissions on receptors outside of the facility property lines. A worst-case approach for emission estimates was taken due to the nature of the operational capability of the facility.

Model Description

The Office of Air Quality review used the Industrial Source Complex Short Term (ISCST3) model, Version 3, dated April 10, 2000 to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the United States Environmental Protection Agency (U.S. EPA) approved model, as listed in the 40 Code of Federal Register Part 51, Appendix W AGuideline on Air Quality Models@. The Auer Land Use Classification scheme was referenced to determine the land use in a 3 kilometer (1.9 miles) radius from the source. The area is considered primarily agricultural, therefore a rural classification was used. The model also utilized the Schulman-Scire algorithm to account for building downwash effects. Stacks associated with the proposed electric generating facility are below the Good Engineering Practice (GEP) formula for stack heights. This indicates wind flow over and around surrounding buildings can influence the dispersion of concentrations coming from the stacks. 326 IAC 1-7-3 requires a study to demonstrate that excessive modeled concentrations will not result from stacks with heights less than the GEP stack height formula. These aerodynamic downwash parameters were calculated using U.S. EPA's Building Profile Input Program (BPIP).

Meteorological Data

The meteorological data used in the ISCST3 model consisted of the latest five years of available surface data from the Evansville, IN National Weather Service station merged with the mixing heights from Peoria, IL Airport National Weather Service station. The 1990-1994 meteorological data was purchased through the National Oceanic and Atmospheric Administration (NOAA) and National Climatic

Hoosier Energy
Bedford, IN

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Data Center (NCDC) and preprocessed into ISCST3-ready format with a version of U.S. EPA's PCRAMMET.

Receptor Grid

Ground-level points (receptors) surrounding the source are input into the model to determine the maximum modeled concentrations that will occur at each point. OAQ modeling utilized receptor grids out to 10 kilometers (6.2 miles) for all pollutants. Dense receptor grids surround the property with receptors spaced every 100 meters (328 feet) out to 2 kilometers (1.25 miles), receptors spaced every 200 meters (656 feet) from 2 kilometers to 4 kilometers (2.5 miles), receptors spaced every 500 meters (1640 feet) from 4 kilometers to 10 kilometers (6.2 miles). Discrete receptors were placed 100 meters or 328 feet apart on Hoosier Energy's property lines.

Modeled Emissions Data

The modeling used the emission rates listed in the technical support document of the permit. The modeling results reflect these emissions and are considered the controlling results for this air quality analysis.

Modeled Results

Maximum modeled concentrations for each pollutant over its significant emission rate are listed below in Table 2 and are compared to each pollutant's significant impact level for Class II areas, as specified by U.S. EPA in the Federal Register, Volume 43, No. 118, pg 26398 (Monday, June 19, 1978).

TABLE 2 - Summary of OAQ Significant Impact Analysis (ug/m3)					
<u>Pollutant</u>	<u>Year</u>	<u>Time-Averaging Period</u>	<u>Hoosier Energy Maximum Modeled Impacts</u>	<u>Significant Impact Levels</u>	<u>Significant Monitoring Levels</u>
NO ₂	1994	Annual - 8760 hrs/yr	0.27	1.0	14.0
SO ₂	1994	3-hour	22.1	25.0	a
SO ₂	1992	24-hour	1.08	5.0	13.0
SO ₂	1994	Annual - 8760 hrs/yr	0.019	1.0	a
PM ₁₀	1994	24-hour	0.35	5.0	10.0
PM ₁₀	1991	Annual - 8760 hrs/yr	0.007	1.0	a

^a No limit exists for this time-averaged period.

Due to unknown stack parameters for the diesel fire pump, different parameters were attempted. Data from similar facilities, a stack height of 20 feet with a diameter of 0.41 feet was used. The diameter was taken directly from a previously permitted facility. Shorter stack height produced exceedances of all three of the Sulfur Dioxide significant impact levels.

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Part C - Hazardous Air Pollutant Analysis and Results

As part of the air quality analysis, OAQ requests data concerning the emission of 188 Hazardous Air Pollutants (HAPs) listed in the 1990 Clean Air Act Amendments which are either carcinogenic or otherwise considered toxic. These substances are listed as air toxic compounds on the State of Indiana, Department of Environmental Management, Office of Air Quality construction permit application Form Y. Any HAP emitted from a source will be subject to toxic modeling analysis. The modeled emissions for each HAP are the total emissions, based on assumed operation of 8760 hours per year.

OAQ performed toxic modeling using the Screen 3 model for all HAPs. Maximum 8-hour concentrations were determined and the concentrations were recorded as a percentage of each HAP Permissible Exposure Limit (PEL). The PELs were established by the Occupational Safety and Health Administration (OSHA) and represent a worker's exposure to a pollutant over an 8-hour workday or a 40-hour workweek. In Table 3 below, the results of the HAP analysis with the emission rates, modeled concentrations and the percentages of the PEL for each HAPs are listed. All HAP concentrations were modeled below 0.5% of their respective PEL. The Screen 3 model results are conservative compared to ISCT 3 model results. In the following table the Maximum 8 hour concentration for the worst case emissions (formaldehyde) using the Screen 3 model are less than 0.5% of PEL.

TABLE 3 - Hazardous Air Pollutant Analysis					
<u>Hazardous Air Pollutants</u>	<u>Total HAP Emissions</u>	<u>Limited HAP Emissions</u>	<u>Maximum 8-hour concentrations</u>	<u>PEL</u>	<u>Percent of PEL</u>
	(tons/year)	(tons/year)	(ug/m3)	(ug/m3)	(%)
Acetaldehyde	0.214	0.214	1.50E-3	360000.0	0.00013333
Benzene	0.284	0.284	1.95E-3	3200.0	0.00450000
Formaldehyde	3.8	3.8	2.66E-2	930.0	0.35
Naphthalene	0.181	0.181	1.26E-3	50000.0	0.00003320
Toluene	0.695	0.695	4.86E-3	750000.0	0.00020933
Xylene	0.342	0.342	2.39E-3	435000.0	0.00001770