



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

September 29, 2003

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Worthington Generation, LLC / 055-17772-00034

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this approval is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER-MOD.dot 9/16/03



Frank O'Bannon
Governor

Lori F. Kaplan
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September 29, 2003

Paul Reynolds
Worthington Generation, LLC
RR1, Box 37B
Switz City, Indiana 47465

Re: MSM 055-17772-00034
Minor Source Modification to:
Part 70 permit No.: T055-14484-00034

Dear Mr. Reynolds:

Worthington Generation, LLC was issued a Part 70 permit on May 28, 2003 for a merchant power plant. A letter requesting changes to the source was received on June 4, 2003. Pursuant to 326 IAC 2-7-10.5, the following emission unit is approved for construction at the source:

Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO₂; 5 lb/hr or 25 lb/day NO_x; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:

- (1) One (1) natural gas-fired boiler, a maximum heat input capacity of 17.7 MMBtu/hr, with emissions uncontrolled, exhausting to stack S-5.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required

operation conditions.

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

Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Bob Sidner, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (703) 633-1701 to speak directly to Mr. Sidner. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027, dial extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

ERG/BS

cc: File - Greene County
Greene County Health Department
Air Compliance Section Inspector - Mark Goldman
Compliance Data Section - Karen Nowak
Administrative and Development -Sara Cloe
Technical Support and Modeling - Michele Boner



Frank O'Bannon
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PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

Worthington Generation, LLC South of Intersection of Routes 67/237 and Route 57 Worthington, Indiana 47471

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T055-14484-00034	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: 5/28/03 Expiration Date: 5/28/08

Minor Source Modification No.: 055-17772-00034	Affected Pages: 2, 4
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: September 29, 2003

SECTION A

SOURCE SUMMARY

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

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

The Permittee owns and operates a 180 MW merchant electric generating peaking station.

Responsible Official:	Vice President, Hoosier Energy REC
Source Address:	South of Intersection of Routes 67/237 and Route 57, near Worthington, IN 47471
Mailing Address:	RR1, Box 37B, Switz City, IN 47465
Source Phone Number:	812-875-9707
SIC Code:	4911
County Location:	Greene
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act Not 1 of 28 source categories

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

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

Four (4) simple cycle natural gas-fired turbines, identified as Turbines 1 through 4, constructed in 2000, with a maximum heat input capacity of 460 MMBtu/hr per turbine and a generating capacity of 45 MW per turbine, with water-injection for NO_x emissions control and exhausting to four (4) stacks designated as S-1 through S-4, respectively.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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

- (a) Emergency diesel generators not exceeding 1600 horsepower: One (1) diesel-fired emergency generator, constructed in 2000, with a maximum capacity of 588 hp. [326 IAC 2-2]
- (b) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO₂; 5 lb/hr or 25 lb/day NO_x; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:
 - (1) One (1) natural gas-fired boiler, a maximum heat input capacity of 17.7 MMBtu/hr, with emissions uncontrolled, exhausting to stack S-5.

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

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

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is an affected source under Title IV (Acid Deposition Control) of the Clean Air Act, as defined in 326 IAC 2-7-1(3); and
- (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).

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Turbines

Four (4) simple cycle natural gas-fired turbines, identified as Turbines 1 through 4, constructed in 2000, with a maximum heat input capacity of 460 MMBtu/hr and a generating capacity of 45 MW per turbine, with water-injection for NO_x emissions control and exhausting to four (4) stacks designated as S-1 through S-4, respectively.

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

Emissions Limitation and Standards [326 IAC 2-7-5(1)]

D.1.1 Fuel Usage Limitations [326 IAC 2-2]

Pursuant to CP 055-10724-00034, issued July 15, 1999:

- (a) The total "weighted" natural gas usage for the turbines shall not exceed 4,930 million standard cubic feet (MMSCF) during any twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) For every 1.0 million standard cubic feet (MMSCF) consumed by the boiler (Section D.2), the "weighted" natural gas limit shall be reduced by 1.08 million standard cubic feet (MMSCF).
- (c) The "weighted" natural gas usage is determined in the winter months (October through April) by multiplying the actual natural gas usage by 2.35. During the summer months (May through September) the actual natural gas usage is equivalent to the "weighted" natural gas usage.

Based on a higher heating value for natural gas of 1,020 Btu per cubic foot, compliance with these limitations, in addition to the operating hour limitation on the emergency generator (Section D.2), is equivalent to NO_x and CO emissions of less than 250 tons, per pollutant, during any twelve (12) consecutive month period and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

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 GG.

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

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.

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 peck 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) Combust only pipeline natural gas, as defined by 40 CFR 72.2, in the turbines.

D.1.4 Emission Rate Limitations [326 IAC 2-2] [40 CFR 52.21] [326 IAC 8-1-6]

Pursuant to CP 055-10724-00034, issued July 15, 1999,

- (a) The CO and NO_x emission rates from the turbines during the summer months (May through September) shall not exceed 99.5 pounds per million cubic feet of natural gas combusted. The CO and NO_x emission rates from the turbines during the winter months (October through April) shall not exceed 233.8 pounds per million cubic feet of "weighted" natural gas combusted. Compliance with these limits and the limitations in Condition D.1.1(a) will ensure that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, do not apply.
- (b) The VOC emission rate from the turbines during the summer months (May through September) shall not exceed 9.5 pounds per million cubic feet of natural gas combusted. The VOC emission rate from the turbines during the winter months (October through April) shall not exceed 22.3 pounds per million cubic feet of natural gas combusted. Compliance with these limitations along with Condition D.1.1(b) will ensure that 326 IAC 8-1-6 (BACT) does not apply.

D.1.5 Water-to-Fuel Ratio Monitoring [40 CFR Part 60, Subpart GG]

The Permittee shall install and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine. This system shall be accurate to within ±5.0 percent and shall be approved by the IDEM, OAQ. [40 CFR 60.334(b)]

D.1.6 Preventive Maintenance Plan [326 IAC 1-6-3]

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

Compliance Determination Requirements

D.1.7 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11] [40 CFR 75.12]

- (a) Prior to October 14, 2005, and in order to demonstrate compliance with Conditions D.1.1, D.1.3 and D.1.4(a) the Permittee shall perform NO_x stack tests utilizing methods as approved by the Commissioner. These tests shall be performed in accordance with Section C -Performance Testing, and repeated the earlier of 3,000 unit operating hours or once every five (5) years from the date of this valid compliance demonstration.
- (b) Prior to October 14, 2005, and in order to demonstrate compliance with Conditions D.1.1, D.1.3 and D.1.4(a), the Permittee shall perform NO_x stack tests utilizing methods as approved by the Commissioner. These tests shall be performed during the summer months (May through September), in accordance with Section C -Performance Testing, and repeated the earlier of 3,000 unit operating hours or once every five (5) years from valid compliance demonstration. If the NO_x stack tests required in (a) of this condition are performed during the summer months (May through September), the separate NO_x tests described here are not required.

- (c) Prior to September 27, 2005, and in order to demonstrate compliance with Conditions D.1.1, and D.1.4(a) the Permittee shall perform CO stack tests utilizing methods as approved by the Commissioner. These tests shall be performed in accordance with Section C -Performance Testing, and repeated once every five (5) years from the date of this valid compliance demonstration.
- (d) Prior to September 27, 2005, and in order to demonstrate compliance with Condition D.1.4(b), the Permittee shall perform VOC stack tests utilizing methods as approved by the Commissioner. Separate testing shall be performed during the summer months (May through September) and winter months (October through April). These tests shall be performed in accordance with Section C -Performance Testing, and repeated once every five (5) years from valid compliance demonstration.

D.1.8 Nitrogen Oxides Monitoring Requirement [326 IAC 10-4-4(b)(1)] [326 IAC 10-4-12(b) and (c)] [40 CFR 75]

The Permittee shall meet the monitoring requirements of 326 IAC 10-4-12(b)(1) through (b)(3) that are applicable to their monitoring systems for the NO_x budget units on or before May 1, 2003. The Permittee shall record, report, and quality assure the data from the monitoring systems on and after May 1, 2003 in accordance with 326 IAC 10-4-12 and 40 CFR 75.

D.1.9 Sulfur Content and Nitrogen Content Monitoring [40 CFR Part 60, Subpart GG]

- (a) Pursuant to 40 CFR Part 60, Subpart GG (Stationary Gas Turbines), and EPA approval issued December 7, 2000, the Permittee shall comply with the following custom monitoring schedule:

Determine the sulfur content of the fuel being fired in the turbines semiannually. This determination shall be conducted during the first and third quarters of each calendar year and will be made using methods approved by the Commissioner. If any sulfur analysis indicates noncompliance with Condition D.1.3, the Permittee shall notify IDEM of such excess emissions and this custom schedule shall be re-examined. Sulfur monitoring shall be conducted weekly while the custom schedule is re-examined. If there is a change in fuel supply (supplier), IDEM, OAQ shall be notified of the change and the fuel shall be sampled daily for a period of two weeks to re-establish that the fuel supply is low in sulfur content. If the fuel supply's low sulfur content is re-established, then the custom monitoring schedule can resume.

- (b) 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.

The NO_x and SO₂ monitoring required by 40 CFR Part 75 and specified in Condition D.1.10 shall satisfy the monitoring requirements for the purposes of 40 CFR Part 60, Subpart GG.

D.1.10 SO₂ and NO_x Monitoring Requirements [40 CFR Part 72.9] [40 CFR Part 75]

- (a) Pursuant to CP 055-10724-00034, issued July 15, 1999, and 40 CFR 72.9 and 40 CFR 75.11, the Permittee has elected to monitor SO₂ emissions from the natural gas-fired combustion turbines pursuant to 40 CFR 75, Appendix D. Appendix D includes, but is not limited to, the following requirements:

- (1) For each hour when the unit is combusting fuel, the Permittee shall measure and record the flow of fuel combusted by the unit with an in-line flowmeter and automatically record the data with a data acquisition and handling system. This shall be performed in accordance with the procedures specified in Section 2.1 of Appendix D.

- (2) The Permittee shall use the default SO₂ emission rate of 0.0006 lb/MMBtu and the hourly input from pipeline natural gas in MMBtu/hr, as determined using the procedures in section 5.5 of Appendix F to 40 CFR Part 75. The Permittee shall calculate SO₂ emissions using equation D-5 of Appendix D.
 - (3) The Permittee shall provide information on the contractual sulfur content from the pipeline gas supplier in the monitoring plan for the unit, demonstrating that the gas has a hydrogen sulfide content of 1 grain/100 scf or less, and a total sulfur content of 20 grain/100 scf or less.
- (b) Pursuant to CP 055-10724-00034, issued July 15, 1999, 40 CFR 72.9, and 40 CFR 75.12, the Permittee has elected to monitor NO_x emissions from the natural gas-fired combustion turbines pursuant to 40 CFR 75, Appendix E, which is used for peaking units. Appendix E includes, but is not limited to, the following requirements:
- (1) The Permittee shall perform initial performance tests for each turbine to measure NO_x emission rates at heat input rate levels corresponding to different load levels, measure the heat input rate, and plot the correlation between heat input rate and NO_x emission rate, in order to determine the emission rate of the units. This testing shall be performed in accordance with section 2.1 of Appendix E.
 - (2) The Permittee shall retest the NO_x emission rate of the turbines prior to the earlier of 3,000 unit operating hours or the 5 year anniversary and renewal of its operating permit under 40 CFR Part 72.
 - (3) The Permittee shall record the time (hr. and min.), load (MWge or steam load in 1000 lb/hr), fuel flow rate and heat input rate (using the procedures in section 2.1.3 of Appendix E) for each hour during which the unit combusts fuel. The Permittee shall calculate the total hourly heat input using equation E-1 of Appendix E and record the heat input rate for each fuel to the nearest 0.1 MMBtu/hr. During partial unit operating hours, heat input must be represented as an hourly rate in MMBtu/hr, as if the fuel were combusted for the entire hour at that rate in order to ensure proper correlation with the NO_x emission rate graph.
 - (4) The Permittee shall use the graph of the baseline correlation results to determine the NO_x emissions rate (lb/MMBtu) corresponding to the heat input rate (MMBtu/hr) and input this correlation into the data acquisition and handling system for the turbines. The data shall be linearly interpolated to 0.1 MMBtu/hr heat input rate and 0.01 lb/MMBtu.

If either combustion turbine exceeds a capacity factor of 20 percent in any given year, or an average capacity factor of 10 percent for the previous 3 years, then the Permittee shall install, certify, and operate a NO_x continuous emission monitoring (CEM) system by December 31 of the following calendar year. The NO_x CEM system shall meet the minimum requirements of 40 CFR Part 75 and 326 IAC 3-5.

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

D.1.11 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1, the Permittee shall maintain records of the monthly fuel usage.
- (b) To document compliance with Conditions D.1.1, D.1.3, D.1.4, D.1.9, and D.1.10 the Permittee shall maintain records of the SO₂ and NO_x emissions in accordance with 40 CFR Part 75, Appendices D and E. In addition, the hours of operation of each turbine

shall be recorded and maintained to ensure that the turbines are defined as peaking units.

- (c) To document compliance with Condition D.1.5, the Permittee shall maintain records of fuel consumption and the ratio of water to fuel being fired in the turbines.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.12 Nitrogen Oxides Budget Permit Application Submittal Requirement [326 IAC 10-4-4(a)(1)]
[326 IAC 10-4-9(e)]

- (a) For NO_x budget units that commenced operation prior to January 1, 2001, the NO_x authorized account representative shall submit a complete NO_x budget permit application in accordance with 326 IAC 10-4-7 at least two hundred seventy (270) days prior to May 31, 2004. This application shall be submitted by the NO_x authorized account representative to:

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

- (b) For the NO_x budget units that commenced operation on or after May 1, 2000, the NO_x authorized account representative shall submit a request for NO_x allowances in accordance with 326 IAC 10-4-9(e) by September 1 of the calendar year that is one (1) year in advance of the first ozone control period for which the NO_x allowance allocation is requested. The NO_x authorized account representative shall submit a request each year that the units will require allowances from the new unit set aside until the units are allocated allowances from the existing source pool. These requests shall be submitted by the NO_x authorized account representative to:

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

D.1.13 Reporting Requirements

- (a) A quarterly summary of the information used to document compliance with Condition D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.
- (b) The Permittee shall submit a quarterly excess emissions report indicating any period during which the NO_x emissions from the turbines were greater than the amount allowed by the equation in Condition D.1.3, or any period during which the fuel bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance determined from performance testing.
- (c) The Permittee shall submit a quarterly excess emissions report indicating any daily period during which the SO₂ emissions from the turbines were greater than the amount allowed in Condition D.1.3.
- (d) The Permittee shall submit reports of any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with Condition D.1.3 from performance testing.

- (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. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Specifically Regulated Insignificant Activities

- (a) Emergency diesel generators not exceeding 1600 horsepower: One (1) diesel-fired emergency generator, constructed in 2000, with a maximum capacity of 588 hp. [326 IAC 2-2]
- (b) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO₂; 5 lb/hr or 25 lb/day NO_x; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:
 - (1) One (1) natural gas-fired boiler, a maximum heat input capacity of 17.7 MMBtu/hr, with emissions uncontrolled, exhausting to stack S-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 [326 IAC 2-7-5(1)]

D.2.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 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 boiler except when otherwise specified in 40 CFR Part 60, Subpart Dc.

D.2.2 NO_x and CO Limitations [326 IAC 2-2]

The emergency generator is limited to 500 hours of operation per twelve month consecutive period with compliance determined at the end of each month.

Compliance with this limit, along with the natural gas usage limitation for the turbines and boiler (Condition D.1.1), is equivalent to NO_x and CO emissions of less than 250 tons per year and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.2.3 Particulate Matter [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate matter emissions from the boiler shall not exceed 0.516 pounds per MMBtu energy input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

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

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 17.7 MMBtu/hr).

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

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

D.2.5 Record Keeping Requirements

- (a) To document compliance with Condition D.2.2, and 40 CFR Part 60 Subpart Dc, the Permittee shall maintain records of the:

- (1) Number of hours in which the emergency generated operated each month; and

- (2) Amount of natural gas (MMSCF) consumed by the boiler each day.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.6 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

Quarterly Report

Source Name: Worthington Generation, LLC
 Source Address: South of the intersection of Route 67/237 and Route 57 near Worthington, IN 47471
 Mailing Address: RR1, Box 37B, Switz City, IN 47465
 Part 70 Permit No.: T055-14484-00034
 Facility: Turbines and boiler
 Pollutant: NO_x, CO
 Parameter: Less than 4,930 MMSCF per twelve (12) consecutive month period with compliance determined at the end of each month. For every 1.0 MMSCF consumed by the boiler, the "weighted" natural gas usage limit shall be reduced by 1.08 MMSCF.

Year: _____

Month	Natural Gas Used by Turbines This Month (MMSCF)	Weighting Factor	Natural Gas Used by Boiler This Month (MMSCF)	Total "Weighted" Natural Gas Usage This Month (MMSCF)*	Total "Weighted" Natural Gas Usage for Past 11 Months (MMSCF)	Total "Weighted" Natural Gas Usage for 12 Month Period (MMSCF)

* Weighted natural gas usage (October through April) = [Actual gas usage (turbines) x 2.35] + [Actual gas usage (boiler) x 1.08]
 * Weighted natural gas usage (May through September) = Actual gas usage (turbines) + (Actual gas usage (boiler) x 1.08)

Submitted by: _____
 Title/Position: _____
 Signature: _____
 Date: _____
 Phone: _____

Attach a signed certification to complete this report.

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

**Technical Support Document (TSD) for a
Minor Source Modification and a Significant Permit Modification
to a Part 70 Operating Permit**

Source Background and Description

Source Name:	Worthington Generation, LLC
Source Location:	South of Intersection of Routes 67/237 and Route 57, near Worthington, IN 47471
Mailing Address:	RR1, Box 37B, Switz City, IN 47465
County:	Greene
SIC Code:	4911
Operation Permit No.:	T055-14484-00034
Operation Permit Issuance Date:	May 28, 2003
Minor Source Modification No.	055-17772-00034
Significant Permit Modification No:	055-17372-00034
Permit Reviewer:	ERG/BS

The Office of Air Quality (OAQ) has reviewed an application for a minor source modification and significant permit modification from Hoosier Energy REC for Worthington Generation relating to:

- (a) The construction and operation of:

One (1) natural gas-fired boiler, a maximum heat input capacity of 17.7 MMBtu/hr, with emissions uncontrolled, exhausting to stack S-5.

The boiler will be used to generate hot water to keep the existing turbines warm during colder temperatures.

- (b) The revision of Condition D.1.9 from T055-14484-00034, issued May 28, 2003, to document the EPA's approval of a custom sulfur content monitoring schedule in order to ensure compliance with 40 CFR 60.333.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Permit Modification be approved. This recommendation is based on the following facts and conditions:

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

An application for the purposes of this review was received on June 4, 2003.

Existing Approvals

The source was issued a Part 70 Operating Permit (T055-14484-00034) on May 28, 2003.

Emission Calculations

See Appendix A (page 1) of this document for detailed emissions calculations.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source 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.”

This table reflects the potential to emit of the new boiler. Note that this permit modification does not result in an increase in allowable emissions because the source has accepted source-wide limits (pursuant to T055-14484-00034, issued May 28, 2003) to be classified as a PSD minor source, pursuant to 326 IAC 2-2. Emissions from the boiler are included in that source-wide limit. See State Rule Applicability - 326 IAC 2-2 for more information.

Pollutant	Potential To Emit (tons/year)
PM	0.59
PM-10	0.59
SO ₂	0.05
VOC	0.43
CO	6.51
NO _x	7.75

The HAP emissions from the boiler are negligible.

Justification for Modification

The Part 70 operating permit (T055-14484-00034, issued May 28, 2003) is being modified through a Part 70 Minor Source Modification and a Significant Permit Modification.

- (b) This source modification is necessary pursuant to 326 IAC 2-7-10.5(d)(6) because the boiler is subject to the requirements of 40 CFR Part 60 Subpart Dc. See the Federal Rule Applicability section of this document for more information.
- (c) This permit modification is necessary pursuant to 326 IAC 2-7-12(d) because: 1) the source's existing PSD (326 IAC 2-2 - Prevention of Significant Deterioration) Minor limit must be revised to account for the operation of the boiler; and 2) the source's sulfur content monitoring schedule, necessary to demonstrate compliance with 40 CFR Part 60 Subpart GG, is being modified to incorporate EPA approval. Pursuant to 326 IAC 2-7-12(b)(1)(D), any change to a requirement established under Title I of the Clean Air Act (Title I, Part C - Prevention of Significant Deterioration, Title I Part A - New Source Performance Standards) may not be performed as a Minor Permit Modification. Pursuant to 326 IAC 2-7-12(d), a significant change in existing monitoring Part 70 permit terms shall be considered significant.

County Attainment Status

The source is located in Greene County.

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

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Greene County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)).
- (b) Greene County has been classified as attainment or unclassifiable for all pollutants. Therefore, these emissions were reviewed pursuant to the requirements for 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)).
- (c) Fugitive Emissions
 Since there is an applicable New Source Performance Standard that was in effect on August 7, 1980 (40 CFR Part 60 Subpart GG), the fugitive emissions are counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited).

Pollutant	Emissions (tons/year)
PM	26.6
PM-10	26.6
SO ₂	1.7
VOC	23.5
CO	less than 250
NO _x	less than 250

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories. Pursuant to T055-14484-00034, issued May 28, 2003, the natural gas fired in the turbines and the operating hours of the emergency generator, are limited such that the CO and NO_x emissions from the entire source are less than 250 tons per year. Compliance with these limits renders the requirements of 326 IAC 2-2 are not applicable.
- (b) The emissions presented are based on the information provided in the Technical Support Document from T055-14484-00034 (the source's Part 70 permit), issued May 28, 2003. See the table below for additional information.

Potential to Emit of the Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable pursuant to T055-14484-00034, issued May 28, 2003.

Limited Potential to Emit (tons/year)							
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	total HAP
Four (4) Combustion Turbines, 1 through 4	17.5	17.5	1.6	23.4	less than 245.3 ^(a)	less than 227.8 ^(a)	5.01
New natural gas-fired boiler	0.59	0.59	0.05	0.43			Neg.
Diesel fired emergency generator	Neg.	Neg.	0.10	0.14	1.0 ^(a)	2.28 ^(a)	0
Fugitive emissions from unpaved roads	9.06	9.06	0	0	0	0	0
Total Emissions	27.2	27.2	1.75	23.9	less than 250^(a)	less than 250^(a)	5.01

Neg. - Negligible; emissions less than 0.01 tons per year.

(a) The turbines shall not combust more than 4,930 MMCF of "weighted" natural gas per twelve consecutive month period and the emergency diesel generator shall not operate more than 500 hours per year. The structure of the turbine fuel usage limit has been revised, via this significant permit modification, to account for the operation of the new boiler. Compliance with these limitations is equivalent to NO_x and CO emissions of less than 250 tons per year, per pollutant. See State Rule Applicability - 326 IAC 2-2 of this document for more information.

Federal Rule Applicability

(a) The 17.7 MMBtu/hr boiler is subject to the requirements of the New Source Performance Standard (NSPS), 326 IAC 12, 40 CFR Part 60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) because the boiler: 1) has a heat input capacity greater than 10 MMBtu/hr but less than 100 MMBtu/hr; 2) will be constructed after June 9, 1989, and 3) is defined as a "steam generating unit" pursuant to 40 CFR 60.41c. However, the boiler is subject to only the record keeping requirements in 40 CFR 60.48(c) because it is a natural gas-fired boiler. Under this rule, the source is required to maintain daily records of the amount and type of fuel burned. If the source would like to change the frequency of record keeping from daily recording to monthly recording, then the source must send a letter requesting this change to the following address:

George Czemiak
 c/o U.S. Environmental Protection Agency, Region V
 Air and Radiation Division
 Air Enforcement Branch - Indiana (AE-17J)
 77 West Jackson Boulevard
 Chicago, Illinois 60604-3590

The request should reference the NSPS requirement and the EPA memorandum from John Rasnic to Jewell Harper (dated February 20, 1992), which provides guidance on obtaining approval for alternative monitoring plans.

The four (4) combustion turbines are subject to 40 CFR Part 60 Subpart GG (Stationary Gas Turbines) because the heat input at peak load of each turbine is equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.

Pursuant to EPA approval, issued December 7, 2000, the source: 1) does not have to monitor the nitrogen content of the natural gas consumed by the turbines as long as pipeline natural gas, as defined in 40 CFR 72.2, is used; and, 2) shall determine the sulfur content of the fuel fired in the turbines semiannually (instead of daily).

- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to the boiler.
- (c) The requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are not applicable to this source because the source is not a major source of HAPs.
- (d) The boiler is not subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). In order for this rule to apply, a pollutant specific emissions unit at a Part 70 or 71 source must meet three criteria for a given pollutant: 1) the unit is subject to an emission limitation or standard for the applicable regulated air pollutant, 2) the unit uses a control device to achieve compliance with any such emission limitation or standard, and, 3) the unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal or greater than 100 percent of the amount required for a source to be classified as a major source. The boiler has the potential to emit less than 100 tons per year of each pollutant.

State Rule Applicability - Entire source

326 IAC 2-2 (Prevention of Significant Deterioration)

Pursuant to CP 055-10724-00034, issued July 15, 1999, and T055-14484-00034, issued May 28, 2003, the total "weighted" natural gas usage for the four (4) natural gas-fired turbines shall not exceed 4,930 million standard cubic feet (MMSCF) per twelve (12) consecutive month period with compliance determined at the end of each month, and the emergency generator shall operate less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month. Compliance with these limits are equivalent to NO_x and CO emissions of less than 250 tons during any twelve (12) consecutive month period and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

The new boiler has the potential to emit 7.75 tons per year and 6.51 tons per year NO_x and CO, respectively. Therefore, the structure of the existing turbines' natural gas consumption limit must be revised to accommodate the operation of the 17.7 MMBtu/hr boiler. As a result, the aforementioned limitation has been revised to:

Pursuant to CP 055-10724-00034, issued July 15, 1999, the:

- (a) Total "weighted" natural gas usage for the four (4) natural gas-fired turbines shall not exceed 4,930 million standard cubic feet (MMSCF) per twelve (12) consecutive month period with compliance determined at the end of each month, and the emergency generator shall operate less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

- (b) For every one (1.0) million standard cubic feet (MMSCF) consumed by the boiler, the “weighted” natural gas limit shall be reduced by 1.08 million standard cubic feet (MMSCF).

Based on a higher heating value for natural gas of 1,020 Btu per cubic foot, compliance with these limitations are equivalent to NO_x and CO emissions of less than 250 tons, each, during any twelve (12) consecutive month period and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

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 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 1st 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.

State Rule Applicability - Boiler

326 IAC 2-4.1 (Hazardous Air Pollutants)

The boiler has the potential to emit hazardous air pollutants (HAPs) less than ten tons per year of any single HAP and less than 25 tons of any combination of HAPs and was constructed prior to July 27, 1997. Therefore, the requirements of 326 IAC 2-4.1 do not apply to the boiler.

326 IAC 6-2-4 (Particulate Matter from Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-4, the particulate matter emissions from the boiler shall not exceed 0.516 pounds per MMBtu energy input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

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

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 17.7 MMBtu/hr).

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

The boiler has the potential to emit less than 25 tons of SO₂ per year. Therefore, the boiler is not subject to the requirements of 326 IAC 7-1.1-2.

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

The boiler has the potential to emit less than 25 tons of VOC per year. Therefore, it is not subject to the requirements of 326 IAC 8-1-6.

Testing Requirements

Testing is not required for the boiler. Compliance with the 326 IAC 2-2 shall be demonstrated with records of the amount of natural gas consumed by the boiler.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

Compliance monitoring is not required for the boiler because the boiler does not use a control device and the estimated actual PM emission rate is sufficiently low.

Proposed Changes

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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

- (a) Emergency diesel generators not exceeding 1600 horsepower: One (1) diesel-fired emergency generator, constructed in 2000, with a maximum capacity of 588 hp. [326 IAC 2-2]
- (b) **Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO₂; 5 lb/hr or 25 lb/day NO_x; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:**
 - (1) **One (1) natural gas-fired boiler, a maximum heat input capacity of 17.7 MMBtu/hr, with emissions uncontrolled, exhausting to stack S-5.**

D.1.1 Fuel Usage Limitations [326 IAC 2-2] ~~[40 CFR 52.21]~~

Pursuant to CP 055-10724-00034, issued July 15, 1999:

- (a) The total "weighted" natural gas usage for the turbines shall not exceed 4,930 million standard cubic feet (MMSCF) during any twelve (12) consecutive month period with compliance determined at the end of each month. ~~Based on a higher heating value for natural gas of 1,020 Btu per cubic foot, the emissions from this fuel usage limitation, and the emissions from the emergency generator, are equivalent to carbon monoxide (CO) emissions of less than 245.3 tons during any twelve (12) consecutive month period.~~

~~This limitation will also restrict NO_x emissions to less than 227.8 tons during any twelve (12) consecutive month period. Compliance with this limit and the limitations in Condition D.1.4 will render the requirements of 326 IAC 2-2 and 40 CFR 52.21 not applicable.~~

(b) For every 1.0 million standard cubic feet (MMSCF) consumed by the boiler (Section D.2), the “weighted” natural gas limit shall be reduced by 1.08 million standard cubic feet (MMSCF).

~~(b c)~~ The “weighted” natural gas usage is determined in the winter months (October through April) by multiplying the actual natural gas usage by 2.35. During the summer months (May through September) the actual natural gas usage is equivalent to the “weighted” natural gas usage.

Based on a higher heating value for natural gas of 1,020 Btu per cubic foot, compliance with these limitations, in addition to the operating hour limitation on the emergency generator (Section D.2), is equivalent to NO_x and CO emissions of less than 250 tons, per pollutant, during any twelve (12) consecutive month period and will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

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

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.

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.

(3) Combust only pipeline natural gas, as defined by 40 CFR 72.2, in the turbines.

D.1.9 Sulfur Content and Nitrogen Content Monitoring [40 CFR Part 60, Subpart GG]

(a) Pursuant to 40 CFR Part 60, Subpart GG (Stationary Gas Turbines), **and EPA approval issued December 7, 2000**, the Permittee shall **comply with the following custom monitoring schedule**: monitor the nitrogen and sulfur content of the natural gas on a daily basis as follows:

~~(1) Monitor 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.~~ **Determine the sulfur content of the fuel being fired in the turbines semiannually. This determination shall be conducted during the first and third quarters of each calendar year and will be made using methods approved by the Commissioner. If any sulfur analysis indicates noncompliance with Condition D.1.3, the Permittee shall notify IDEM of such excess emissions and this custom schedule shall be re-examined. Sulfur monitoring shall be conducted weekly while the custom schedule is re-examined. If there is a change in fuel supply (supplier), IDEM, OAQ shall be notified of the change and the fuel shall be sampled daily for a period of two weeks to re-establish that the fuel supply is low in sulfur content. If the fuel supply's low sulfur content is re-established, then the custom monitoring schedule can resume.**

~~(2) Monitor 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.~~

(b) 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.

~~(c) 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.~~

The NO_x and SO₂ monitoring required by 40 CFR Part 75 and specified in Condition D.1.10 shall satisfy the monitoring requirements for the purposes of 40 CFR Part 60, Subpart GG.

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Specifically Regulated Insignificant Activities

(a) Emergency diesel generators not exceeding 1600 horsepower: One (1) diesel-fired emergency generator, constructed in 2000, with a maximum capacity of 588 hp. [326 IAC 2-2]

(b) **Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO₂; 5 lb/hr or 25 lb/day NO_x; 3 lb/hr or 15 lb/day VOC; 0.6 tons per year Pb; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:**

(1) **One (1) natural gas-fired boiler, a maximum heat input capacity of 17.7 MMBtu/hr, with emissions uncontrolled, exhausting to stack S-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 [326 IAC 2-7-5(1)]

D.2.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 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 boiler except when otherwise specified in 40 CFR Part 60, Subpart Dc.

D.2.4 2 NO_x and CO Limitations [326 IAC 2-2]

The emergency generator is limited to 500 hours of operation per twelve month consecutive period with compliance determined at the end of each month. ~~This limit, along with the "weighted" natural gas usage limitation for the turbines (Condition D.1.1), will limit the source's potential to emit nitrogen oxides (NO_x) and carbon monoxide (CO) to less than 250 tons per year.~~

Compliance with this limit, along with the natural gas usage limitation for the turbines and boiler (Condition D.1.1), is equivalent to NO_x and CO emissions of less than 250 tons per year and ~~Compliance with this limit will render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.~~

D.2.3 Particulate Matter [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate matter emissions from the boiler shall not exceed 0.516 pounds per MMBtu energy input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

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

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 17.7 MMBtu/hr).

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

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

D.2.2 5 Record Keeping Requirements

- (a) To document compliance with Condition D.2.4 2, and 40 CFR Part 60 Subpart Dc, the Permittee shall maintain records of the:
- (1) ~~n~~**Number of hours in which the emergency generated operated each month;**
and
 - (2) **Amount of natural gas (MMSCF) consumed by the boiler each day.**
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.3 6 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.4 2 ~~and~~ shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

Quarterly Report

Source Name: Worthington Generation, LLC
 Source Address: South of the intersection of Route 67/237 and Route 57 near Worthington, IN 47471
 Mailing Address: RR1, Box 37B, Switz City, IN 47465
 Part 70 Permit No.: T055-14484-00034
 Facility: Turbines and boiler
 Pollutant: NO_x, CO
 Parameter: Less than 4,930 MMSCF per twelve (12) consecutive month period with compliance determined at the end of each month. **For every 1.0 MMSCF consumed by the boiler, the “weighted” natural gas usage limit shall be reduced by 1.08 MMSCF** (equivalent to less than 245.3 tons CO and less than 227.8 tons NO_x per (12) consecutive month period)

Year: _____

Month	Natural Gas Usage Used by Turbines This Month (MMSCF)	Weighting Factor	Natural Gas Used by Boiler This Month (MMSCF)	Total “Weighted” Natural Gas Usage This Month (MMSCF)*	Total “Weighted” Natural Gas Usage for Past 11 Months (MMSCF)	Total “Weighted” Natural Gas Usage for 12 Month Period (MMSCF)

* To obtain the “weighted” natural gas usage, multiply the actual natural gas usage for the month by the weighting factor. The weighting factor is 2.35 and should be used for months October through April.

* Weighted natural gas usage (October through April) = [Actual gas usage (turbines) x 2.35] + [Actual gas usage (boiler) x 1.08]

* Weighted natural gas usage (May through September) = Actual gas usage (turbines) + (Actual gas usage (boiler) x 1.08)

Conclusion

This proposed modification shall be subject to the conditions of the attached proposed Part 70 Minor Source Modification No. 055-17772-00034 and Significant Permit Modification No. 055-17372-00034.

**Appendix A: Emissions Calculations
Natural Gas Combustion (MMBtu/hr < 100)**

Company Name: Worthington Generation
Address City IN Zip: South of Intersection of Routes 67/231 and Route 57
Permit Number: MSM 055-17772-00034
Reviewer: ERG/BS
Date: June 23, 2003

Heat Input Capacity

MMBtu/hr

Potential Throughput: MMCF/yr

Criteria Pollutants

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.59	0.59	0.05	7.75	0.43	6.51

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

METHODOLOGY

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

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

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

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

HAPs

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.628E-04	9.303E-05	5.814E-03	1.395E-01	2.636E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	3.876E-05	8.528E-05	1.085E-04	2.946E-05	1.628E-04

METHODOLOGY

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Determination of fuel equivalence factor for boiler:

The boiler source has agreed to limit the total natural gas usage to the turbines in order to limit NOx and CO emissions. The boiler has the potential to emit NOx and CO, however, emits those pollutants at a rate different from the turbines. Therefore, the natural gas equivalent limit must be adjusted accordingly- see below for calculations.

NOx is the worst case pollutant from the boiler; 100 lb NOx/MMCF.

NOx emissions from the turbines are estimated to be 92.5 lb CO/MMCF.

Therefore, the appropriate equivalency factor for the boiler is:

$$100 \text{ lb NOx/MMCF(boiler)} \times 1/92.5 \text{ (1/lb CO MMCF (turbine))} = 1.08$$