



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant
DATE: December 20, 2005
RE: IPower Energy Systems / 095-21896-00118
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from 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-AM.dot 1/10/05



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
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Mr. Larry T. George
IPower Energy Systems, LLC
4640 Dr. Martin Luther King Jr. Blvd.
Anderson, Indiana 46013

Dear Mr. George:

Re: Exempt Operation Status,
095-21896-00118

On October 13, 2005, IPower Energy Systems, LLC located at 4640 Dr. Martin Luther King Jr. Blvd., Anderson, Indiana notified IDEM, OAQ that except for three (3) natural gas-fired test stands (identified as E1, E2 and E3) and ten (10) natural gas-fired space heaters, all other emission units listed in FESOP No.: 095-16578-00118 no longer exist at this location. The removal of these processes reduced the potential emissions to less than the exemption levels specified in 326 IAC 2-1.1-3, thereby eliminating the need for a FESOP. Pursuant to IC 4-21.5-3-5(a) and (b), FESOP No. 095-16578-00118, issued May 15, 2003, is revoked, effective eighteen (18) days from the date of this letter.

Any construction or modification that would result in potential to emit greater than the exemption levels, as specified in 326 IAC 2-1.1-3 (Exemptions) shall be subject to New Source Review (NSR) and must be approved by IDEM, OAQ before such construction and modification may occur.

Based on the information submitted by IPower Energy Systems, LLC, and the provisions of 326 IAC 2-1.1-3, the following remaining emission units at this natural gas-fired generators testing plant are exempt from air pollution permit requirements:

- (a) Three (3) natural gas-fired engine test stands (identified as E1, E2 and E3) with an output rating of 113 HP (85 kW units) each with emissions exhausting to stacks E1, E2 and E3, respectively.
- (b) Ten (10) natural gas-fired space heaters (identified as No. 1 through No. 10) with a total combined heat input capacity of 1.75 MMBtu per hour.

The following conditions shall be applicable:

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:

- (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 15 minutes (60 readings) in a 6-hour period 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.

This exemption is the third air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Ms. Sanobar Durrani, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7810 to speak directly to Ms. Durrani. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204-2251 or call (800) 451-6027, ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Paul Dubenetzky, Assistant Commissioner
Office of Air Quality

ERG/SD

cc: File - Madison County
Madison County Health Department
Air Compliance – Jennifer Dorn
Anderson Office of Air Management
Northern Regional Office
Permit Tracking
Compliance Data Section

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

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	IPower Energy Systems, LLC
Source Location:	4640 Dr. Martin Luther King Jr. Blvd., Anderson, Indiana 46013
County:	Madison
SIC Code:	3621
Operation Permit No.:	095-21896-00118
Permit Reviewer:	ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from DTE Energy Technologies relating to the operation of a stationary natural gas-fired generator testing plant.

History

DTE Energy Technologies (DTE) purchased the existing natural gas-fired generator manufacturing plant from iPower Technologies, Inc. on December 29, 2004. iPower Technologies, Inc. was issued FESOP No.: 095-16578-00118 on May 15, 2003.

On October 13, 2005, DTE submitted an application to IDEM, OAQ indicating that except for three (3) natural gas-fired test stands (identified as E1, E2 and E3) and ten (10) natural gas-fired space heaters, all other emission units listed in FESOP No.: 095-16578-00118 have never existed under DTE's ownership. Also, in their submitted application, DTE indicated that emission rates for NO_x, CO and VOC for the three (3) natural gas-fired engine test stands have been established by stack tests performed at Flagship Enterprise Center (Flagship) on August 5, 2005. Flagship operates two 85 kW (113 HP) units identical to the unit DTE operates. On November 16, 2005, IDEM's Compliance and Determination section approved the use of these emission rates. Flagship was issued an Exemption No. 095-21028-00123 on May 19, 2005. Since the potential emissions of all criteria pollutants and HAPs from the operation of the natural gas-fired engine test stands (identified as E1, E2 and E3) and the ten (10) natural gas-fired space heaters are less than the levels listed in 326 IAC 2-1.1-3(e)(1), an Exemption was drafted pursuant to 326 IAC 2-1.1-3.

On November 28, 2005, the Permittee informed IDEM, OAQ of the company name change from DTE Energy Technologies to IPower Energy Systems, LLC. After the issuance of this Exemption for IPower Energy Systems, LLC, the FESOP shall be revoked by IDEM, OAQ.

Permitted Emission Units and Pollution Control Equipment

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

- (a) Three (3) natural gas-fired engine test stands (identified as E1, E2 and E3) with an output rating of 113 HP (85 kW units) each with emissions exhausting to stacks E1, E2 and E3, respectively.

- (b) Ten (10) natural gas-fired space heaters (identified as No. 1 through No. 10) with a total combined heat input capacity of 1.75 MMBtu per hour.

Note: The following emission units were previously included in the FESOP issued to this source in 2003. Based on information provided by the source, these units have never existed at the plant under DTE's ownership.

- (a) Two (2) natural gas fired engine built test stands identified as E17 and E18, each with an output rating of 670 HP, and each exhausting through stacks E17 and E18, respectively.
- (b) One (1) natural gas fired engine built test stand identified as E19, with an output rating of 1600 HP, and exhausting through stack E19.
- (c) Insignificant Activities, including:
 - (1) Thirteen (13) natural gas fired engine endurance test stands identified as E4 through E16, each with an output rating of 235 HP, and each exhausting through stacks E4 through E16, respectively.
 - (2) One (1) epoxy dip tank, identified as PDG-U500, which is capable of coating stator coils at a maximum rate of 300 units per hour.
 - (3) One electric drying oven, at a rated capacity of 108 kW.
 - (4) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.
 - (5) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
 - (6) Closed loop heating and cooling systems.
 - (7) Infrared cure equipment.
 - (8) Paved and unpaved roads and parking lots with public access.
 - (9) Stationary fire pumps.

Unpermitted Emission Units and Pollution Control Equipment

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

Existing Approvals

The source has been operating under the following previous approvals:

- (a) FESOP 095-16578-00118 issued on May 15, 2003; and
- (b) First Administrative Amendment 095-19657-00118, issued on December 29, 2004.

All conditions from previous approvals were incorporated into this permit except the following:

- (a) FESOP 095-16578-00118 issued on May 15, 2003

Conditions pursuant to 326 IAC 2-8 (FESOP)

Reason not incorporated: On October 13, 2005, DTE submitted an application to IDEM, OAQ indicating that except for three (3) natural gas-fired engine test stands (identified as E1, E2 and E3) and ten (10) natural gas-fired space heaters, all other emission units listed in FESOP No.: 095-16578-00118 have never existed under DTE's ownership. The potential to emit of all criteria pollutants and HAPs from the test stands and space heaters are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, conditions pursuant to 326 IAC 2-8 (FESOP) are no longer applicable.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
SV1-3	Test Stands	9.0	0.33	900	210

Recommendation

The staff recommends to the Commissioner that the 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.

An application for the purposes of this review was received on October 13, 2005, with additional information received on November 4, 2005 and November 28, 2005.

Emission Calculations

See Appendix A of this document for detailed emission calculations Appendix A, page 1 through 5.

Potential to Emit of the Source Before Controls

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	0.15
PM10	0.15
SO ₂	7.93E-03
VOC	0.04
CO	0.72
NO _x	0.75

HAPs	Potential to Emit (tons/year)
Benzene	1.58E-05
Dichlorobenzene	9.02E-06
Formaldehyde	5.64E-04

Hexane	1.35E-02
Toluene	2.56E-05
Total	1.41E-02

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption will be issued.
- (c) **Fugitive Emissions**
 Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Madison County.

Pollutant	Status
PM-10	Attainment
PM 2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

- (a) Madison County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability - Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Madison County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for nonattainment new source review. See the State Rule Applicability - Entire Source section.
- (c) Madison County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability - Entire Source section.

Source Status

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

Pollutant	Emissions (tons/year)
PM	0.15
PM10	0.15
SO ₂	7.39E-03
VOC	0.04
CO	0.72
NO _x	0.75
Single HAP	<10
Combination HAPs	<25

- (a) This existing source is not a major stationary source (under PSD) because no regulated pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories.
- (b) This existing source is not a major stationary source (under Emission Offset) because no nonattainment regulated pollutant is emitted at a rate of 100 tons per year or greater and it is not in one of the 28 listed source categories..
- (c) These emissions were based on the potential to emit calculations prepared for this source during the review of this Exemption Application and shown in Appendix A.

Proposed Modification

The Permittee has indicated all emission units as listed under the existing FESOP No.: 095-16578-00118 issued May 15, 2003 never existed under their ownership, except for the three (3) natural gas-fired engine test stands (identified as E1, E2, and E3) and ten (10) natural gas-fired space heaters. Therefore, the table below reflects the change in the potential to emit (as defined in 326 IAC 2-1.1-1(16)).

Process Facility	Potential to Emit (tons/year)						
	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs
E1 through E16 (235 bhp each)	0.42	0.003	0.025	7.262	75.157	60.997	2.20 (single) 2.98 (total)
E17 and E16 (670 bhp each)	0.15	0.004	0.009	2.58	19.40	19.40	0.78 (single) 1.06 (total)
E19 (1600 bhp)	0.04	0.00	0.004	0.17	4.32	4.32	0.05 (single) 0.07 (total)
Space Heaters (1-10)	0.00 0.06	0.10 0.06	0.00 4.51E-03	0.00 0.04	0.73 0.63	0.80 0.75	Negl. 1.41E-02
Dip Tank (PD6-U500)	0.00	0.00	0.00	2.46	0.00	0.00	0.00
Engine Test Stands (E1, E2, and E3)	0.04 0.10	0.04 0.10	4.12E-04 2.88E-03	0.02 1.14E-03	2.29 0.09	4.59 7.67E-04	0.0
Total Emissions	0.07 0.15	0.07 0.15	4.92E-03 7.93E-03	0.06 0.04	2.92 0.72	2.34 0.75	1.41E-02

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This is the third air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this exemption for this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 20 and 40 CFR Parts 61 and 63) included in this exemption for this source.

State Rule Applicability – Entire Source

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

DTE Energy Technologies is not in 1 of the 28 source categories and was previously operating under the provisions of 326 IAC 2-8, FESOP No. 095-16578-00118, issued May 15, 2003, that limited the potential to emit of each criteria pollutant to less than 100 tons per year. The potential to emit of PM from the entire source as listed in the TSD to FESOP No. 16578 is equal to 0.74 tons per year. Therefore, this source is minor under PSD and the provisions of 326 IAC 2-2 (PSD) do not apply.

326 IAC 2-3 (Emission Offset)

DTE Energy Technologies is located in Madison County which was designated in June 2002 as non-attainment for ozone under the 8-hour standard. VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to 326 IAC 2-3 (Emission Offset). DTE was previously operating under the provisions of 326 IAC 2-8, FESOP No. 095-16578-00118, issued May 15, 2003, that limited the potential to emit of each criteria pollutant to less than 100 tons per year. Therefore, the potential to emit of VOC and NO_x never exceeded 100 tons per year. Therefore, this source is minor under Emission Offset and the provisions of 326 IAC 2-3 (Emission Offset) do not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Madison County and is not required to operate pursuant to the provisions of a Part 70 permit, 326 IAC 2-7. Therefore, the provisions of 326 IAC 2-6 (Emission Reporting) do not apply.

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 the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

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

The operation of this stationary natural gas-fired generator manufacturing plant emits less than ten (10) tons per year of a single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the provisions of 326 IAC 2-4.1 do not apply.

State Rule Applicability – Natural Gas-Fired Engine Test Stands

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

The three (3) natural gas-fired engine test stands are not subject to the provisions of 326 IAC 6-3 (Particulate Emission Limitations from Manufacturing Processes) because according to 326 IAC 6-3-1(b)(14), manufacturing processes with potential emissions less than five hundred fifty one thousandths (0.551) pounds per hour are exempt from the provisions of this rule.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The three (3) natural gas-fired engine test stands are not subject to the provisions of 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating) because these units are not indirect heating units. These units are used for testing generators.

State Rule Applicability – Natural Gas-Fired Space Heaters

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

The ten (10) natural gas-fired space heaters are not subject to the provisions of 326 IAC 6-3 (Particulate Emission Limitations from Manufacturing Processes) because according to 326 IAC 6-3-1(b)(14) manufacturing processes with potential emissions less than five hundred fifty one thousandths (0.551) pounds per hour are exempt from the provisions of this rule.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The ten (10) natural gas-fired space heaters are not subject to the provisions of 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating) because these units are not indirect heating units.

Conclusion

The operation of this stationary natural gas fired generator testing plant shall be subject to the conditions of this Exemption No.: 095-21896-00118.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Space Heaters**

Company Name: IPower Energy Systems, LLC
Address: 4640 Dr. Martin Luther Kind Jr. Blvd., Anderson, Indiana 46013
Exemption: 095-21896
Plt ID: 095-00118
Reviewer: ERG/SD
Date: November 29, 2005

Heat Input Capacity
(MMBtu/hour)

1.75

Potential Throughput
(MMscf/year)

15.03

	Pollutant					
	* PM	* PM10	SO₂	** NO_x	VOC	CO
Emission Factor (lb/MMscf)	1.90	7.60	0.60	100	5.50	84.0
Potential To Emit (tons/year)	1.43E-02	5.71E-02	4.51E-03	7.51E-01	4.13E-02	6.31E-01

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

**Emission factor for NOx (Uncontrolled) = 100 lb/MMscf.

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

All emission factors are based on normal firing.

METHODOLOGY

Potential throughput (MMscf/year) = Heat input capacity (MMBtu/hour) * 8760 hours/year * 1 MMscf/1020 MMBtu

PTE (tons/year) = Potential throughput (MMscf/year) * Emission factor (lb/MMscf) * 1 ton/2000 lbs

See next page for HAPs emissions calculations.

Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Space Heaters

Company Name: IPower Energy Systems, LLC

Address: 4640 Dr. Martin Luther Kind Jr. Blvd., Anderson, Indiana 46013

Exemption: 095-21896

Pit ID: 095-00118

Reviewer: ERG/SD

Date: November 29, 2005

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor (lb/MMscf)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential To Emit (tons/year)	1.58E-05	9.02E-06	5.64E-04	1.35E-02	2.56E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor (lb/MMscf)	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential To Emit (tons/year)	3.76E-06	8.27E-06	1.05E-05	2.86E-06	1.58E-05

Methodology is the same as previous page.

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

**Appendix A: Emission Calculations
Natural Gas Combustion Only
Three (3) Engine Test Stands**

Company Name: IPower Energy Systems, LLC
Address: 4640 Dr. Martin Luther Kind Jr. Blvd., Anderson, Indiana 46013
Exemption: 095-21896
Plt ID: 095-00118
Reviewer: ERG/SD
Date: November 16, 2005

Heat Input Capacity
(MMBtu/hour)

Potential Throughput
(MMscf/year)

1.12

9.62

	Pollutant					
	* PM	* PM10	SO ₂	** NOx	VOC	** CO
Emission Factor (lb/MMBtu)	0.02	0.02	0.0006			
Emission Rate (lbs/hour)				1.75E-04	2.61E-04	0.02
Potential To Emit (tons/year)	0.10	0.10	2.88E-03	7.67E-04	1.14E-03	0.09

* Assume all PM emissions are equal to PM10 since AP-42, Chapter 3.2 has only PM emission factor for condensable PM.

** Assume NOx and CO at 90 to 105 percent load to estimate worst case emissions.

Emission factors for PM, PM10, and SO₂ are from AP-42, Chapter 3.2, Table 3.2-3, For 4-Stroke Rich Burn Engines - SCC # 2-02-002-53 (07/00).

Emission rates for NOx, VOC and CO are from a stack test performed at a source operating identical units on August 5, 2005 and as approved by IDEM, CDS on November 16, 2005.

METHODOLOGY

Potential throughput (kgals/year) = Heat input capacity (MMBtu/hour) * 8760 hours/year * 1020 Btu/scf

PTE of PM, PM10, SO₂ (tons/year) = Heat input capacity (MMBtu/hour) * Emission factor (lb/MMBtu) * 8760 hours/year * 1 ton/2000 lbs

PTE of NOx, CO and VOC (tons/year) = Emission Rate from stack test (lbs/hour) * 8760 hours/year * 1 ton/2000 lbs

Appendix A: Emission Calculations
HAP Emissions
Three (3) Natural Gas-Fired Engine Test Stands

Company Name: IPower Energy Systems, LLC
Address: 4640 Dr. Martin Luther Kind Jr. Blvd., Anderson, Indiana 46013
Exemption: 095-21896
Plt ID: 095-00118
Reviewer: ERG/SD
Date: November 16, 2005

Heat Input Capacity (MMBtu/hour)	Rating (Hp)
1.12	113

	Emission Factor (lbs/MMBtu)	PTE (lbs/hour)	PTE (tons/year)
1,1,2,2-Tetrachlorethane	2.52E-05	2.82E-05	1.24E-04
1,1,2-Trichloroethane	1.53E-05	1.71E-05	7.51E-05
1,1-Dichloroethane	1.13E-05	1.27E-05	5.54E-05
1,2-Dichloroethane	1.13E-05	1.27E-05	5.54E-05
1,2-Dichloropropane	1.30E-05	1.46E-05	6.38E-05
1,3-Butadiene	6.63E-04	7.43E-04	3.25E-03
1,3-Dichloropropene	1.27E-05	1.42E-05	6.23E-05
Acetaldehyde	2.79E-03	3.12E-03	1.37E-02
Acrolein	2.63E-03	2.95E-03	1.29E-02
Benzene	1.58E-03	1.77E-03	7.75E-03
Butyr/Isobutraldehyde	4.86E-05	5.44E-05	2.38E-04
Carbon Tetrachloride	1.77E-05	1.98E-05	8.68E-05
Chlorobenzene	1.29E-05	1.44E-05	6.33E-05
Ethane	7.04E-02	7.88E-02	3.45E-01
Chloroform	1.37E-05	1.53E-05	6.72E-05
Ethylbenzene	2.48E-05	2.78E-05	1.22E-04
Ethylene Dibromide	2.13E-05	2.39E-05	1.04E-04
Formaldehyde	2.05E-02	2.30E-02	1.01E-01
Methanol	3.06E-03	3.43E-03	1.50E-02
Methylene Chloride	4.12E-05	4.61E-05	2.02E-04
Naphthalene	9.17E-05	1.03E-04	4.50E-04
PAH	1.41E-04	1.58E-04	6.92E-04
Styrene	1.19E-05	1.33E-05	5.84E-05
Toluene	5.58E-04	6.25E-04	2.74E-03
Vinyl Chloride	7.18E-06	8.04E-06	3.52E-05
Xylene	1.95E-04	2.18E-04	9.57E-04
TOTAL HAPs		0.50	

Emission factors are from AP-42, Chapter 3.2, Table 3.2-2 and 3.2-3, for 4-Stroke Rich Burn Engines (07/00).

METHODOLOGY

PTE (lbs/hour) = Heat input capacity (MMBtu/hour) * Emission factor (lb/MMBtu)

PTE (tons/year) = Heat input capacity (MMBtu/hour) * Emission factor (lb/MMBtu) * 8760 hours/year * 1 ton/2000 lbs

**Appendix A: Emission Calculations
Summary**

Company Name: IPower Energy Systems, LLC
Address: 4640 Dr. Martin Luther Kind Jr. Blvd., Anderson, Indiana 46013
Exemption: 095-21896
Plt ID: 095-00118
Reviewer: ERG/SD
Date: November 16, 2005

Emission Units	PM	PM10	SO₂	NO_x	VOC	CO	HAPs
Space Heaters (NG)	0.01	0.06	4.51E-03	0.75	0.04	0.63	1.41E-02
RV Test Stands (NG)	0.10	0.10	2.88E-03	7.67E-04	1.14E-03	0.09	
TOTAL	0.11	0.15	7.39E-03	0.75	0.04	0.72	1.41E-02