



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: November 10, 2005
RE: Generac Power Systems, Inc. / 039-21808-00523
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

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 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

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 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
FN-REGIS.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
(317) 232-8603
(800) 451-6027
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Mr. Jeff Kaufmann
Generac Power Systems, Inc.
4528 Chester Drive
Elkhart, Indiana 46515

November 10, 2005

Re: Registered Operation Status, 039-21808-00523

Dear Mr. Kaufmann:

The application from Generac Power Systems, Inc. received on September 22, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following recreational vehicle testing and preparation plant, located at 4528 Chester Drive, Elkhart, Indiana 46515 is classified as registered:

- (a) One (1) miscellaneous touch-up paint operation, with a maximum throughput rate of 16 generators per hour, utilizing aerosol cans for touch-up paint application and exhausting to roof vents. This operation was installed in 1999.
- (b) Two (2) natural gas-fired space heaters (identified as H1 and H2), each with a maximum heat input capacity of 0.2 MMBtu per hour. These units were installed in 1999.
- (c) Three (3) existing RV test stands (identified as TS1, TS2 and TS3) installed in 1999 and one (1) new RV test stand (identified as TS4) installed in 2005, utilizing any one of the following fuel at a given time and exhausting at stack S1:
 - (1) Gasoline at maximum usage rate of 5.07 gallons per hour;
 - (2) No. 2 fuel oil at maximum usage rate of 2.91 gallons per hour; and
 - (3) Propane at maximum usage rate of 8.29 gallons per hour.

The following conditions shall be applicable:

- (a) 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:
 - (1) 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.
 - (2) 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.

(b) 326 IAC 8-2-9 (Miscellaneous Metal Coating)

- (1) Pursuant to 326 IAC 8-2-9 and Exemption No.: 039-11226-00523 issued September 27, 1999, the Permittee shall not allow the discharge into the atmosphere VOC in excess of three and five-tenths (3.5) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator.
- (2) Pursuant to 326 IAC 8-2-9(f), all solvents sprayed from the application equipment of touch-up operations during cleanup or color changes shall be directed into containers. Said containers shall be closed as soon as the solvent spraying is complete. In addition, all waste solvent shall be disposed of in such a manner that minimizes evaporation.
- (3) Compliance with the VOC content limit shall be determined pursuant to 326 IAC 8-1-2(a)(7), using a volume weighted average of coatings on a daily basis. This volume weighted average shall be determined by the following equation:

$$A = [\sum (c) \times U] / \sum U$$

Where:

A = Volume weighted average in lbs VOC per gallon less water as applied;
C = VOC content of the coating in lbs VOC per gallon less water as applied; and
U = Usage rate of the coating in gallons per day.

This registration is the third air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
Indianapolis, IN 46204-2251**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

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. Sanober Durani, 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,

Original signed by
Paul Dubenetzky, Assistant Commissioner
Permits Branch
Office of Air Quality

ERG/SD

cc: File – Elkhart County
Elkhart County Health Department
Northern Regional Office
Air Compliance – Paul Karkiewicz
Permit Tracking
Compliance Data Section

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	Generac Power Systems, Inc.
Address:	4528 Chester Drive
City:	Elkhart, Indiana 46515
Authorized individual:	Jon Vyn
Phone #:	(262) 473-5514
Registration #:	039-21808-00523

I hereby certify that Generac Power Systems, Inc. is still in operation and is in compliance with the requirements of Registration No. 039-21808-00523.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Generac Power Systems, Inc.
Location: 4528 Chester Drive, Elkhart, Indiana 46515
County: Elkhart
SIC Code: 3621
Registration No.: 039-21808-00523
Permit Reviewer: ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from Generac Power System, Inc. relating to the operation of a recreational vehicle testing and preparation plant.

History

Generac Power Systems operates a Recreational Vehicle testing and preparation plant located at 4528 Chester Drive, Elkhart, Indiana for which it was issued an Exemption No.:039-11494-00523, on November 23, 1999. The source received assembled RV generators for testing and makes touch-up adjustments as needed after which the RV generators are repacked and shipped offsite. On September 22, 2005, the Permittee submitted an application to IDEM, OAQ requesting the following modifications at their source:

- (a) Install a new Test Stand #4 (identified as TS4);
- (b) Revise the fuel usage rates of existing Test Stands #1 through #3 (identified as TS1, TS2, and TS3);
- (c) Remove existing stacks S1 and S2 for Test Stands #1 through #4 (identified as TS1, TS2 and TS3); and
- (d) Install a new stack (identified as S1) for Test Stands #1 through #4.

Installation of new Test Stand #4 and revising the fuel usage rates of the existing Test Stands #1 through #3 results in potential to emit of CO greater than twenty-five (25) tons per year and less than one hundred (100) tons per year. The potential to emit of other criteria pollutants are less than five (5) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations).

Permitted Emission Units and Pollution Control Equipment

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

- (a) One (1) miscellaneous touch-up paint operation, with a maximum throughput rate of 16 generators per hour, utilizing aerosol cans for touch-up paint application and exhausting to roof vents. This operation was installed in 1999.
- (b) Two (2) natural gas-fired space heaters (identified as H1 and H2), each with a maximum heat input capacity of 0.2 MMBtu per hour. These units were installed in 1999.

- (c) Three (3) existing RV test stands (identified as TS1, TS2, and TS3) installed in 1999 and one (1) new RV test stand (identified as TS4) to be installed in 2005, utilizing any one of the following fuels at a given time and exhausting at stack S1:
- (1) Gasoline at maximum usage rate of 5.07 gallons per hour;
 - (2) No. 2 fuel oil at maximum usage rate of 2.91 gallons per hour; and
 - (3) Propane at maximum usage rate of 8.29 gallons per hour.

Note: The above units (except for Test Stand TS4) were previously exempt from permitting requirements.

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 previous approvals including, but not limited to, the following:

- (a) Exemption No.: 039-11226-00523, issued on September 27, 1999, and
- (b) Exemption No.: 039-11494-00523, issued on November 23, 1999.

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

Exemption No.: 039-11226-00523, issued September 27, 1999:

Condition (8): 326 IAC 6-3 (Process Operations) for RV Engine Test Stands

Reason not incorporated: The four (4) RV Engine Test Stands are not subject to the provisions of 326 IAC 6-3 because according to 326 IAC 6-3-2(b)(14) manufacturing processes with potential particulate emissions less than 0.551 pounds per hour are exempt from the provisions of this rule.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
S1	Four Engine Test Stands	18	3.25	2,000	475

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 September 22, 2005. Additional information was received on October 10, 2005 and October 12, 2005.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 9).

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	0.24
PM10	0.24
SO ₂	0.07
VOC	2.23
CO	26.2
NO _x	1.28

Pollutant	Potential to Emit (tons/year)
Benzene	1.67E-03
Dichlorobenzene	9.29E-06
Formaldehyde	2.67E-03
Hexane	1.39E-02
Toluene	7.50E-04
Xylene	0.18
Propylene	0.005
Ethylbenzene	0.042
Glycol Ether	0.02
Total HAP	0.25

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of CO is greater than twenty-five (25) tons per year and less than one-hundred (100) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration 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 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year.
- (c) Fugitive Emissions
 Since this type of operation is not in 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 Elkhart County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
1-Hour Ozone	Attainment
8-Hour Ozone	Non-Attainment
CO	Attainment
Lead	Attainment

- (a) Elhart 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 (NOx) emissions 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Elkhart County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability Entire Source section.
- (c) Elkhart 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	0.24
PM10	0.24
SO ₂	0.07
VOC	2.23
CO	26.2
NO _x	1.28
Single HAPs	<10
Combination HAPs	<25

- (a) This existing source is not a major stationary source for 326 IAC 2-2(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 for 326 IAC 2-3(Emission Offset) because no non-attainment regulated pollutant is emitted at a rate of 100 tons per year or greater.
- (c) These emissions were based on the potential to emit calculations for the source as shown in Appendix A.

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 status is based on the potential to emit calculations for the source (see Appendix A).

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) included in this registration for this source.

- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this registration for this source.

State Rule Applicability – Entire Source

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

This source was a minor source when it was built in 1999 and is not in one (1) of the twenty-eight (28) listed source categories. There have been no modifications at the source since its construction. On September 22, 2005, the Permittee submitted an application requesting permission for the following modification: (a) install a new Test Stand # 4 (identified as TS4); (b) revise the fuel usage rates of existing Test Stands #1 through #3 (identified as TS1, TS2, and TS3); (c) remove existing stacks S1 and S2 for Test Stand #1 through #4 (identified as TS1, TS2 and TS3); and (d) install a new stack (identified as S1) for Test Stands #1 through #4 (identified as TS1, TS2, TS3 and TS4). Previously it was assumed that the test stands (TS1, TS2, and TS3) can burn any combination of fuel (natural gas, gasoline, propane, or diesel) at a maximum heat input rate equal to 0.304 MMBtu/hour. The heat input rate was based on the following:

Gasoline usage rate of 2.43 lbs/hour * 0.130 MMBtu/gal of gasoline = 0.315 MMBtu/hour

However, there was a discrepancy in the heat input rate value (calculated above) and the value used in the Exemption (0.304 MMBtu/hour). Moreover, the Permittee has now indicated that natural gas was never used to fuel generators for testing (it is only used for convenience heating) and each test stand can only use one fuel at any one time. In addition, the Permittee has provided the revised fuel usage rates for all four (4) test stands as follows:

- (1) Gasoline at maximum usage rate of 5.07 gallons per hour;
- (2) No. 2 fuel oil at maximum usage rate of 2.91 gallons per hour; and
- (3) Propane at maximum usage rate of 8.29 gallons per hour

After these modifications, the potential to emit of each criteria pollutant from the entire source is less than 250 tons per year. Therefore, this source is a minor source and the provisions of 326 IAC 2-2 (PSD) do not apply.

326 IAC 2-3 (Emission Offset)

Elkhart County was designated in June 2004 as nonattainment 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). This source, including the modifications described under 326 IAC 2-2 (PSD), is minor for Emission Offset because the potential to emit of VOC and NO_x are less than 100 tons per year. Therefore, the provisions of 326 IAC 2-3 (Emission Offset) do not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Elkhart County and is not required to obtain a Part 70 permit because the potential to emit of all criteria pollutants are less than one hundred (100) tons per year. Therefore, the provisions of 326 IAC 2-6 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 recreational vehicle testing and preparation 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 – Touch-up Operations

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

The touch-up operations using aerosol cans for paint application on metal parts are not subject to the provisions of 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) because these operations utilize less than five (5) gallons of coating per day.

326 IAC 8-1-6 (New Facilities - General Reduction Requirement)

Although constructed after January 1, 1980, the touch-up operations using aerosol cans for paint application on metal parts are not subject to the provisions of 326 IAC 8-1-6 because the coating of metal parts is subject to another Article 8 rule.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

- (a) Pursuant to 326 IAC 8-2-9 and Exemption No.: 039-11226-00523 issued September 27, 1999, the Permittee shall not allow the discharge into the atmosphere VOC in excess of three and five-tenths (3.5) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator.
- (b) Pursuant to 326 IAC 8-2-9(f), all solvents sprayed from the application equipment of touch-up operations during cleanup or color changes shall be directed into containers. Said containers shall be closed as soon as the solvent spraying is complete. In addition, all waste solvent shall be disposed of in such a manner that minimizes evaporation.
- (c) Compliance with the VOC content limit shall be determined pursuant to 326 IAC 8-1-2(a)(7), using a volume weighted average of coatings on a daily basis. This volume weighted average shall be determined by the following equation:

$$A = [\sum (c) \times U] / \sum U$$

Where:

A = Volume weighted average in lbs VOC per gallon less water as applied;
C = VOC content of the coating in lbs VOC per gallon less water as applied; and
U = Usage rate of the coating in gallons per day.

State Rule Applicability – RV Test Stands

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

The four (4) RV 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 four (4) RV 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 boilers or process heaters. These units are used for testing generators.

Conclusion

The operation of this Recreational Vehicle testing and preparation plant shall be subject to the conditions of the Registration No.: 039-21808-00523.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Two (2) Space Heaters**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Plt ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 2005

Heat Input Capacity
(MMBtu/hour)

Potential Throughput
(MMSCF/year)

0.40

3.44

	Pollutant					
	* PM	* PM10	SO ₂	** NO _x	VOC	CO
Emission Factor (lb/MMSCF)	7.60	7.60	0.60	100	5.50	84.0
Potential To Emit (tons/year)	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01

* PM and PM10 emission factors are filterable and condensable PM and PM10 combined.

**Emission factor for NO_x (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
Two (2) Space Heaters**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Pit ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 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)	3.61E-06	2.06E-06	1.29E-04	3.09E-03	5.84E-06

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)	8.59E-07	1.89E-06	2.40E-06	6.53E-07	3.61E-06

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: Emissions Calculations
HAP Emissions
Touch-up Operations**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Plt ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 2005

Material	Density (lb/gal)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Ethylbenzene	Weight % Glycol Ether	Potential To Emit (tons/year)		
							Xylene	Ethylbenzene	Glycol Ether
Compartment Tan	6.44	0.000625	16.0	17.0%	3.65%	1.00%	4.80E-02	1.03E-02	2.82E-03
Black Gloss	6.30	0.000625	16.0	16.0%	5.00%	3.00%	4.42E-02	1.38E-02	8.28E-03
Tank/Frame Black	6.32	0.000625	16.0	14.0%	3.05%	0.00%	3.88E-02	8.44E-03	0.00E+00
Telecome Gray	6.56	0.000625	16.0	16.0%	3.38%	2.00%	4.60E-02	9.71E-03	5.75E-03

Total Single HAP (tons/year) =	0.18	0.04	0.02
Combination of HAPs (tons/year) =	0.24		

METHODOLOGY

PTE of HAPs (tons/year) = Density (lb/gal) * Gal of Mat. (gal/unit) * Maximum (unit/hour) * Weight % HAP * 8760 hours/year * 1 ton/2000 lbs

**Appendix A: Emission Calculations
Propane Combustion Only
Four (4) RV Test Stands**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Plt ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 2005

Heat Input Capacity
(MMBtu/hour)

Potential Throughput
(kgals/year)

S = Weight % Sulfur

0.78

10.3

0.01

	Pollutant					
	* PM	* PM10	SO ₂	NO _x	VOC	CO
Emission Factor (lb/kgal)	0.40	0.40	0.001 0.10S	14.0	0.50	1.90
Potential To Emit (tons/year)	2.07E-03	2.07E-03	5.16E-06	7.23E-02	2.58E-03	9.81E-03

* Assume all PM emissions are equal to PM10.

One (1) gallon of commercial-grade propane has a heating value of 94,000 Btu.

Emission factors are from AP-42, Tables 1.5-1 SCC #1-03-010-02 (10/96)

NOTE:

The Permittee conducts engine tests on generators (16 generators per hour) and have a total of 4 test stands, i.e. 4 units per test stand per hour. Each test requires an assembly time of 15 to 20 minutes per unit and each test takes 2.5 minutes. Therefore, the Permittee runs the test for 8.57 minutes per hour, or equivalent to 1,251 hours per year.

METHODOLOGY

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hour) * 1251 hours/year * 1 kgal/1000 gallon * 1 gal/ 0.094 MMBtu

PTE (tons/year) = Potential Throughput (kgals/year) * Emission Factor (lb/kgal) * 1 ton/2000 lbs

**Appendix A: Emission Calculations
Diesel No. 2 Fuel Oil Combustion Only
Four (4) RV Test Stands**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Plt ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 2005

Heat Input Capacity
(MMBtu/hour)

Potential Throughput
(kgals/year)

S= Weight % Sulfur

0.40

3.66

0.50

	Pollutant					
	* PM	* PM10	SO ₂	NOx	VOC	CO
Emission Factor (lb/kgal)	42.5	42.5	39.7	604	0.36	130
Emission Factor (lb/MMBtu)						
Potential To Emit (tons/year)	0.08	0.08	0.07	1.11	6.37E-01	0.24

* PM and PM10 emission factors are filterable and condensable PM and PM10 combined.
One (1) gallon of No. 2 Fuel Oil has a heating value of 138,000 Btu.

Emission factors are from FIRE 6.23, Reciprocating Engine - SCC # 2-04-004-02.
Emission factor for VOC is from AP-42, Chapter 3.3 Tables 3.3-1, SCC # 2-03-001-01 (10/96).

NOTE:

The Permittee conducts engine tests on generators (16 generators per hour) and have a total of 4 test stands, i.e. 4 units per test stand per hour. Each test requires an assembly time of 15 to 20 minutes per unit and each test takes 2.5 minutes. Therefore, the Permittee runs the test for 8.57 minutes per hour, or equivalent to 1,251 hours per year.

METHODOLOGY

Potential throughput (kgals/year) = Heat input capacity (MMBtu/hour) * 1251 hours/year * 1 kgal/1000 gallon * 1 gallon/0.138 MMBtu
PTE of VOC (tons/year) = Heat Input Capacity (MMBtu/hour) * Emission factor (lb/MMBtu) * 8760 hours/year * 1 ton/2000 lbs
PTE of PM, PM10, SO₂, Nox, & CO (tons/year) = Potential throughput (kgal/year) * Emission factor (lb/kgal) * 1 ton/2000 lbs
See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations
Diesel No. 2 Fuel Oil Combustion Only
Four (4) RV Test Stands**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Pit ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 2005

HAPs - Organics

	Benzene	Xylene	Propylene	Formaldehyde	Toluene
Emission Factor (lb/MMBtu)	9.33E-04	2.85E-04	2.58E-03	1.18E-03	4.09E-04
Potential To Emit (tons/year)	1.65E-03	5.04E-04	4.57E-03	2.09E-03	7.24E-04

	Acetaldehyde	Acrolein
Emission Factor (lb/MMBtu)	7.67E-04	9.25E-05
Potential To Emit (tons/year)	1.36E-03	1.64E-04

Emission factors for HAPs are from AP-42, Chapter 3.3, Table 3.3-2 (10/96).

METHODOLOGY

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

**Appendix A: Emission Calculations
Gasoline Fuel Combustion Only
Four (4) RV Test Stands**

Company Name: Generac Power Systems, Inc.
Address: 4528 Chester Drive, Elkhart, Indiana 46515
Registration: 039-21808
Plt ID: 039-00523
Reviewer: ERG/SD
Date: October 28, 2005

Heat Input Capacity
(MMBtu/hour)

0.66

Potential Throughput
(kgals/year)

6.39

	Pollutant					
	* PM	* PM10	SO ₂	NO _x	VOC	CO
Emission Factor (lb/MMBtu)	0.10	0.10	0.084	1.63	3.03	62.7
Potential To Emit (tons/year)	4.15E-02	4.15E-02	3.49E-02	6.77E-01	1.26	26.0

* Assume all PM emissions are equal to PM10.

One (1) gallon of gasoline fuel has a heating value of 130,000 Btu.

Emission factors are from AP-42, Chapter 3.3, Table 3.3-1, Industrial Engines - SCC # 2-02-003-01.

NOTE:

The Permittee conducts engine tests on generators (16 generators per hour) and have a total of 4 test stands, i.e. 4 units per test stand per hour. Each test requires an assembly time of 15 to 20 minutes per unit and each test takes 2.5 minutes. Therefore, the Permittee runs the test for 8.57 minutes per hour, or equivalent to 1,251 hours per year.

METHODOLOGY

Potential throughput (kgals/year) = Heat input capacity (MMBtu/hour) * 1251 hours/year * 1 kgal/1000 gallon * 1 gallon/0.130 MMBtu

PTE (tons/year) = Heat input capacity (MMBtu/hour) * Emission factor (lb/MMBtu) * 1251 hours/year * 1 ton/2000 lbs

**Appendix A: Emission Calculations
Summary**

Company Name: Generac Power Systems, Inc.

Address: 4528 Chester Drive, Elkhart, Indiana 46515

Registration: 039-21808

Plt ID: 039-00523

Reviewer: ERG/SD

Date: October 28, 2005

Emission Unit	PM	PM10	SO ₂	NO _x	VOC	CO	HAPs
Natural Gas Space Heaters	0.01	0.01	1.03E-03	0.17	0.01	0.14	3.23E-03
Touch-Up Operations	0.14	0.14			0.96		0.24
RV Test Stands (Propane)	2.07E-03	2.07E-03	5.16E-06	0.07	0.00	0.01	
RV Test Stands (Diesel No. 2)	0.08	0.08	0.07	1.11	0.64	0.24	1.11E-02
RV Test Stands (Gasoline)	0.04	0.04	0.03	0.68	1.26	26.0	
TOTAL	0.24	0.24	0.07	1.28	2.23	26.2	0.25