

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

November 30, 2006

**PERMIT TO INSTALL**

313-06

**ISSUED TO**

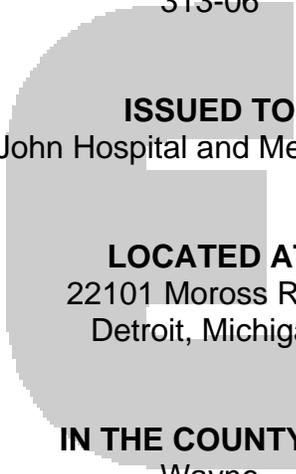
St. John Hospital and Medical Center

**LOCATED AT**

22101 Moross Road  
Detroit, Michigan

**IN THE COUNTY OF**

Wayne



**STATE REGISTRATION NUMBER**

M1812

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: <b>November 9, 2006</b>	
DATE PERMIT TO INSTALL APPROVED: <b>November 30, 2006</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant/Measurement Abbreviations</b>	
AQD	Air Quality Division	Btu	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
EPA	Environmental Protection Agency	gr	Grains
EU	Emission Unit	Hg	Mercury
FG	Flexible Group	hr	Hour
GACS	Gallon of Applied Coating Solids	H <sub>2</sub> S	Hydrogen Sulfide
GC	General Condition	hp	Horsepower
HAP	Hazardous Air Pollutant	lb	Pound
HVLP	High Volume Low Pressure *	m	Meter
ID	Identification	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	ng	Nanogram
MDEQ	Michigan Department of Environmental Quality	NO <sub>x</sub>	Oxides of Nitrogen
MSDS	Material Safety Data Sheet	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM-10	Particulate Matter less than 10 microns diameter
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO <sub>2</sub>	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **[R336.1201(1)]**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **[R336.1201(4)]**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **[R336.1201(6)(b)]**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **[R336.1201(8), Section 5510 of Act 451, PA 1994]**
5. The AQD District Supervisor shall be notified, in writing, of a change in ownership or operational control of the stationary source or emission unit(s) authorized by this Permit to Install pursuant to R336.1219. The notification shall include all of the information required by R336.1219(1)(a) and (b). In addition, a new owner or operator must submit a written statement pursuant to R336.1219(1)(c), agreeing to and accepting the terms and conditions of this Permit to Install, and shall notify the AQD District Supervisor of any change in the contact person for this Permit to Install. **[R336.1219]**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **[R336.1901]**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **[R336.1912]**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law nor does it affect any liability for past violations under the Natural Resources and Environmental Protection Act, 1994 PA 451.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.
11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R336.1303. **[R336.1301]**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this permit to install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R336.1370(2). **[R336.1370]**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

**SPECIAL CONDITIONS**

**Emission Unit Identification**

<b>Emission Unit ID</b>	<b>Emission Unit Description</b>	<b>Stack Identification</b>
EUENGINE9	Caterpillar 3516B 2000 kW diesel fired emergency generator	SVENGINE1
EUENGINE10	Caterpillar 3516B 2000 kW diesel fired emergency generator	SVENGINE2
EUBOILER1	25 MMBtu boiler, #2 fuel oil and natural gas fired	SVBOILERS
EUBOILER2	25 MMBtu boiler, #2 fuel oil and natural gas fired	SVBOILERS
EUBOILER3	25 MMBtu boiler, #2 fuel oil and natural gas fired	SVBOILERS
EUBOILER4	25 MMBtu boiler, #2 fuel oil and natural gas fired	SVBOILERS
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 through R336.1290.		

**Flexible Group Identification**

<b>Flexible Group ID</b>	<b>Emission Units Included in Flexible Group</b>	<b>Stack Identification</b>
FGENGINES	EUENGINE9, EUENGINE10	N/A
FGBOILERS	EUBOILER1, EUBOILER2, EUBOILER3, EUBOILER4	SVBOILERS
FGFACILITY	All equipment at the stationary source including equipment covered by other permits, grandfathered equipment and exempt equipment.	N/A

**The following conditions apply to: FGENGINES**

**Emission Limits**

	<b>Pollutant</b>	<b>Equipment</b>	<b>Limit</b>	<b>Time Period</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirement(s)</b>
1.1	NO <sub>x</sub>	FGENGINES	21.8 tpy	12-month rolling time period as determined at the end of each calendar month	SC 1.4, 1.5, & 1.7	R336.1205, 40 CFR 52.21 (c) & (d)
The NO <sub>x</sub> limit is based on an emission factor of 6.9 grams NO <sub>x</sub> per brake horsepower-hour and 2881 brake horsepower per engine.						

**Material Usage Limits**

- 1.2 The sulfur content of the fuel oil shall not exceed 0.03 percent by weight. [R336.1205, 45 FR 29720, 55 FR 11029, Michigan State Implementation Plan]

**Process/Operational Limits**

- 1.3 The permittee shall not operate FGENGINES for more than 500 hours per engine per 12-month rolling time period as determined at the end of each calendar month. [R336.1205, R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d)]

**Monitoring**

1.4 The permittee shall monitor in a satisfactory manner the hours of operation for FGENGINES on a monthly basis. [R336.1205, R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d)]

**Recordkeeping/Reporting/Notification**

1.5 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NO<sub>x</sub> emission calculation records for FGENGINES, as required by SC 1.1. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. [R336.1205, 40 CFR 52.21 (c) & (d)]

1.6 The permittee shall keep records of the sulfur content, in percent by weight, for each fuel shipment. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. [R336.1205, 45 FR 29720, 55 FR 11029, Michigan State Implementation Plan]

1.7 The permittee shall keep, in a satisfactory manner, a written log of the monthly hours of operation of FGENGINES. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. [R336.1205, R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d)]

**Stack/Vent Restrictions**

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement(s)
1.8a	SVENGINE9	18	45	R336.1225, 40 CFR 52.21 (c) & (d)
1.8b	SVENGINE10	18	45	R336.1225, 40 CFR 52.21 (c) & (d)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

**The following conditions apply to: FGBOILERS**

**Emission Limits**

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement(s)
2.1	NO <sub>x</sub>	FGBOILERS	43.3 tpy	12-month rolling time period as determined at the end of each calendar month	SC 2.2 & 2.3	R336.1205

**Process/Operational Limits**

2.2 The permittee shall not operate more than three of FGBOILERS at any one time. [R336.1205, R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d)]

2.3 The permittee shall fire only natural gas and No. 2 fuel oil FGBOILERS. Oil firing shall be limited to maximum 500 hours per boiler per year. Monthly records of natural gas and No. 2 fuel oil consumption per boiler shall be kept on file for a period of at least two years and made available to the Air Quality Division upon request. [R336.1205, R336.1225, R336.1702(a), 40 CFR 52.21 (c) & (d)]

2.4 The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc, as they apply to FGBOILERS. **[40 CFR Part 60 Subparts A & Dc]**

**Stack/Vent Restrictions**

	<b>Stack &amp; Vent ID</b>	<b>Maximum Diameter (inches)</b>	<b>Minimum Height Above Ground Level (feet)</b>	<b>Applicable Requirement(s)</b>
2.5	SVBOILERS	74	104	R336.1225, 40 CFR 52.21 (c) & (d)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

**The following conditions apply to: FGFACILITY**

**Emission Limits**

	<b>Pollutant</b>	<b>Equipment</b>	<b>Limit</b>	<b>Time Period</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirements</b>
3.1	NOx	FGFACILITY	89.5 tpy	12-month rolling time period as determined at the end of each calendar month	See below, and SC 2.2	R336.1205(3)
<p>The permittee shall calculate NOx emissions for all boilers in FGFACILITY based on fuel usage data per special condition 2.3, and the worst-case emission factor from testing per GC 13, if required by the Department, and the emission factors below. The permittee shall calculate NOx emissions for all emergency generators in FGFACILITY based operating data per special condition 2.4, and the worst-case emission factor from testing per GC 13, if required by the Department, and the engine-specific emission factors listed in Appendix 1.</p> <p>Natural Gas Emission Factor for Boilers      Fuel Oil Emission Factor for Boilers                      NOx = 0.100 lb/MMBtu                              NOx = 0.020 lb/gallon fuel oil</p>						

**Recordkeeping / Reporting / Notification**

- 3.2 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NOx emission records, as required by SC 2.1, for FGFACILITY. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(1)(a) & (3)]**
- 3.3 The permittee shall keep monthly and previous 12-month natural gas and fuel oil usage records for FGFACILITY, in a format acceptable to the AQD District Supervisor, indicating the total amount of natural gas used, in cubic feet, and fuel oil used, in gallons, on a 12-month rolling time period basis. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(1)(a) & (3)]**
- 3.4 The permittee shall keep, in a satisfactory manner, a written log of the monthly hours of operation of each emergency generator at FGFACILITY. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **[R336.1205(1)(a) & (3)]**

**Appendix 1**

**Engine-Specific Emission Factors**

<b>Emission Unit Description</b>	<b>NOx emission factor @ 100% load (g/bhp)</b>
Caterpillar 800 SR9E, 800 kW diesel fired emergency generator	12
Caterpillar D348, 600 kW diesel fired emergency generator	12
Caterpillar 3508, 900 kW diesel fired emergency generator	8.17
Caterpillar 3512DITA, 1000 kW diesel fired emergency generator	11
Caterpillar 3512, 1000 kW diesel fired emergency generator	8.17
Caterpillar 3516B, 2000 kW diesel fired emergency generator	8.17
For any future emergency generators installed under Rule 336.1285(g), the permittee shall revise this table to include the new generator and an acceptable NOx emission factor for the new generator.	