

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Elgin Community College
Attn: Paul A. Dawson
1700 Spartan Drive
Elgin, Illinois 60123

Application No.: 05070026

I.D. No.: 089438AAE

Applicant's Designation:

Date Received: July 12, 2005

Subject: Natural Gas-Fired Boilers and Natural Gas-fired Stationary SI-IC Engines

Date Issued:

Expiration Date:

Location: 1700 Spartan Drive, Elgin, Kane County

This permit is hereby granted to the above designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of two (2) natural gas-fired boilers (B-1, B-2, 17.71 mmBtu/hour, each), one (1) natural gas-fired boiler (B-3, 8.86 mmBtu/hour), fifteen (15) natural gas-fired boilers (HW-B, 23.05 mmBtu/hour, all units combined), four (4) 1135 bhp lean burn Waukesha 5200 GL natural gas-fired stationary SI-IC engines (Gen-1, Gen-2, Gen-3, Gen-4, 8 mmBtu/hour each), one (1) 1280 bhp lean burn Waukesha VHP 7100GS/GSID natural gas-fired stationary SI-IC engine (Gen-5, 10.2 mmBtu/hour) pursuant to the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for Carbon Monoxide (CO) and Nitrogen Oxides (NO_x)). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.
- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period

provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

3. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.
4. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hr) to exceed 200 ppm, corrected to 50 percent excess air.
5. The boilers and the engines shall only be operated with natural gas as the fuel. The use of any other fuel in the boilers or the engines requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- 6a. Operation and emissions of the Boilers (B-1, B-2, B-3, and HW-B) shall not exceed the following limits:

- i. Natural Gas Usage (all units combined): 35 mmscf/month, and 306 mmscf/year.
- ii. Emissions for the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(lbs/mmscf)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Carbon Monoxide (CO)	84	1.47	12.85
Nitrogen Oxides (NO _x)	100	1.75	15.30
Particulate Matter (PM)	7.6	0.13	1.16
Sulfur Dioxide (SO ₂)	0.6	0.01	0.09
Volatile Organic Material (VOM)	5.5	0.10	0.84

These limits are based on the maximum fuel usage, and standard emission factors (Tables 1.4-1, and 1.4.2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- b. Operation and emissions of the four (4) natural gas-fired SI IC engines (5200 GL: 1135 BHP) shall not exceed the following limits:
 - i. Natural gas usage (all four units combined): 9.38 mmscf/month and 75 mmscf/year.
 - ii. Emissions from combustion of natural gas:

<u>Pollutant</u>	Emission Factor		Emissions	
	(lb/mmscf)	(Ton/Mo)	(Ton/Yr)	
Carbon Monoxide (CO)	965.0	4.52	36.19	
Nitrogen Oxides (NO _x)	603.0	2.83	22.61	
Particulate Matter (PM)	38.4	0.18	1.44	
Sulfur Dioxide (SO ₂)	0.6	0.001	0.02	
Volatile Organic Material (VOM)	302.0	1.42	11.33	

These limits are based on the maximum fuel use, the manufacturers test data for NO_x, CO and VOM, and standard emission factors (Table 3.2-2, AP-42, Fifth Edition, Volume I, Supplement F, August 2000) for PM and SO₂.

- c. Operation and emissions of the natural gas-fired SI IC engine (VHP 7100 GS/GSID: 1280 BHP) shall not exceed the following limits:

i. Natural gas usage: 3.38 mmscf/month and 27 mmscf/year.

ii. Emissions from combustion of natural gas:

<u>Pollutant</u>	Emission Factor		Emissions	
	(lb/mmscf)	(Ton/Mo)	(Ton/Yr)	
Carbon Monoxide (CO)	2475.0	4.18	33.41	
Nitrogen Oxides (NO _x)	3575.0	6.03	48.26	
Particulate Matter (PM)	38.4	0.06	0.52	
Sulfur Dioxide (SO ₂)	0.6	0.01	0.01	
Volatile Organic Material (VOM)	83.0	0.14	1.12	

These limits are based on the maximum fuel use, the manufacturers test data for NO_x, CO and VOM, and standard emission factors (Table 3.2-2, AP-42, Fifth Edition, Volume I, Supplement F, August 2000) for PM and SO₂.

- d. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

7a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.

ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of

the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.

- b. Testing required by Condition 8 shall be performed by a qualified independent testing service.
8. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
9. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- 10a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
- i. A log for inspection/maintenance repair records for each boiler and engine;
 - ii. Natural gas usage (mmscf/month and mmscf/year); and
 - iii. Boilers and engines operating hours (hours/month, hours/year).
 - iv. Monthly and annual NO_x, CO, PM, VOM and SO₂ emissions (tons/month, tons/year) with supporting calculations.
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
11. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
- 12a. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The

report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.

b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

If you have any questions concerning this permit, please contact German Barria at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:GB:jws

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from cogeneration plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are well below the levels, (e.g., 100 tons/year for CO and NO_x) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	Emissions (Tons/yr)				
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>
Boilers (B1, B2, B3, HW-B)	12.85	15.30	1.16	0.09	0.84
Natural Gas Fired Waukesha 5200					
GL Engines (Gen-1-Gen-4)	36.19	22.61	1.44	0.02	11.33
Natural Gas Fired Waukesha VHP					
7100 GS/GSD Engine (Gen-5)	<u>33.41</u>	<u>48.26</u>	<u>0.52</u>	<u>0.01</u>	<u>1.12</u>
Totals:	82.45	86.17	3.12	0.12	13.29

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