

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - RENEWAL

PERMITTEE

Elmhurst Memorial Hospital  
Attn: David Samples  
200 Berteau Avenue  
Elmhurst, Illinois 60126-2989

Application No.: 91010084  
Applicant's Designation: ELMHOSP  
Subject: Hospital  
Date Issued: December 15, 2005  
Location: 200 Berteau, Elmhurst

I.D. No.: 043035AFK  
Date Received: September 15, 2005  
Expiration Date: December 15, 2010

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of 2 ETO sterilizers, 4 boilers, 5 emergency generators, 3 underground storage tanks, and 3 gas fired dryers as described in 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 nitrogen oxide from the source to less than the levels at which the source would be a major source (i.e., 100 tons/yr), as further described in Attachment A. As a result the source is excluded from the requirements to obtain a Clean Air Act Permit Program permit.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes the current permit(s) issued for this location.
- 2a. Operation of the boilers in natural gas mode shall not exceed the following limits:
  - i. Natural gas shall be the only fuel fired in boilers 1 and 3.
  - ii. Emissions and operation of all four boilers combined in natural gas mode:

Pollutant	Natural Gas Usage		Emission Factor (Lbs/10 <sup>6</sup> scf)	Emissions	
	(10 <sup>6</sup> scf/Mo)	(10 <sup>6</sup> scf/Yr)		(Ton/Mo)	(Ton/Yr)
NO <sub>x</sub>	60	500	100	3.00	25.00
CO	60	500	84	2.52	21.00
VOM	60	500	5.5	0.17	1.38
SO <sub>2</sub>	60	500	0.6	0.02	0.15
PM	60	500	1.9	0.06	0.48

These limits are based on maximum gas usage and standard emission factors.

- b. Operation of Boiler 4 and 5 in #2 fuel oil mode (diesel fuel) shall not exceed the following limits:

- i. The sulfur content of the fuel shall not exceed 0.30 percent by weight.

- ii.

Pollutant	Fuel Oil Usage		Emission Factor (Lbs/1000 Gal)	Emissions	
	(10 <sup>3</sup> Gal/Mo)	(10 <sup>3</sup> Gal/Yr)		(Ton/Mo)	(Ton/Yr)
NO <sub>x</sub>	250	900	20.00	2.50	9.00
CO	250	900	5.00	0.63	2.25
VOM	250	900	0.2	0.03	0.09
SO <sub>2</sub>	250	900	42.60	5.33	19.17
PM	250	900	2.0	0.25	0.9

These limits are based on maximum fuel oil usage and standard emission factors.

- iii. The Illinois EPA shall be allowed to sample all fuels stored at the above location.

- c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the proceeding 11 months.

- 3a. Operation of the 3 dryers shall not exceed the following limits:

- i. Natural gas shall be the only fuel fired in all 3 dryers.
  - ii. Emissions and operation of three dryers combined shall not exceed the following limits:

- | Pollutant       | Natural Gas Usage        |                          | Emission Factor<br>(Lbs/10 <sup>6</sup> scf) | Emissions |          |
|-----------------|--------------------------|--------------------------|--|-----------|----------|
|                 | (10 <sup>6</sup> scf/Mo) | (10 <sup>6</sup> scf/Yr) |  | (Ton/Mo)  | (Ton/Yr) |
| NO <sub>x</sub> | 5.0                      | 59.0                     | 100  | 0.25      | 2.96     |
| CO              | 5.0                      | 59.0                     | 84   | 0.21      | 2.48     |
| VOM             | 5.0                      | 59.0                     | 5.5  | 0.01      | 0.16     |
| SO <sub>2</sub> | 5.0                      | 59.0                     | 0.6  | 0.01      | 0.02     |
| PM              | 5.0                      | 59.0                     | 1.9  | 0.01      | 0.06     |

These limits are based on maximum natural gas usage and standard emission factors.

- b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the proceeding 11 months.

- 4a. Number 2 fuel (diesel fuel) shall be the only fuel fired in the five generators.
- b. The sulfur content of the fuel shall not exceed 0.30 percent by weight.
- c. i. Emission and operation of Generator 1, 2, and 3 combined shall not exceed the following limits:

<u>Pollutant</u>	<u>Fuel Oil Usage (Gallons/Year)</u>	<u>Emission Factor (Lbs/10<sup>6</sup> Btu)</u>	<u>Emissions (Tons/Year)</u>
NO <sub>x</sub>	20,000	4.41	6.17
CO	20,000	0.95	1.33
SO <sub>2</sub>	20,000	0.29	0.14
PM	20,000	0.31	0.43

These limits are based on maximum fuel usage, heat content of fuel oil (140,000 Btu/gallon), and standard emission factors. Compliance with the annual standard shall be determined monthly from the last 12 months of data.

- ii. Emission and operation of generator 4 and 5 combined shall not exceed the following limits:

<u>Pollutant</u>	<u>Fuel Oil Usage (Gallons/Year)</u>	<u>Emission Factor (Lbs/10<sup>6</sup> Btu)</u>	<u>Emissions (Tons/Year)</u>
NO <sub>x</sub>	30,000	3.2	6.72
CO	30,000	0.85	1.78
VOM	30,000	0.09	0.19
SO <sub>2</sub>	30,000	0.28	0.64
PM	30,000	0.1	0.21

These limits are based on maximum fuel usage, heat content of fuel oil (140,000 Btu/gallon), and standard emission factors. Compliance with annual limits shall be determined monthly from the last 12 months of data.

- d. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- e. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the proceeding 11 months.
- 5a. Within 30 days of written request from the Illinois EPA the Permittee shall submit data on the sulfur content by weight of representative #2 fuel oil, determined by the laboratory analysis.
- b. The submitted data shall include the sulfur content by weight of the #2 fuel oil, a justification of why this is representative, and a description of the sampling procedures and documentation for the analysis.

- c. The Illinois EPA may provide additional time for the performance of this testing upon request from the Permittee which shows that it is not feasible to perform representative testing within 30 days.
- 6a. The Permittee shall maintain records of the following items:
    - i. Natural gas usage ( $10^6$  scf/month and  $10^6$  scf/year) for all four boilers and three dryers.
    - ii. #2 fuel oil usage (gallons/month and gallons/year) for each of the boiler: 4 and 5; generator 1, 2 and 3; and generator 4 and 5.
    - iii. Ethylene oxide usage in the 2 sterilizers (lbs/month and lbs/year).
    - iv.  $\text{NO}_x$ , PM,  $\text{SO}_2$ , and VOM emissions with supporting calculations, for boilers and dryer operating on natural gas, and for boilers and generators operating on #2 fuel oil, respectively.
  - b. These records shall be retained at a readily accessible location at the plant for at least 3 years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request.
- 7. Any exceedance of the requirements of this permit determined by the records required by Condition 6 shall be reported by the Permittee by submitting a quarterly report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the end of the quarter. The report shall include the emissions on an hourly basis, a copy of the relevant records, and a description of the excess or violation and efforts to reduce emissions and future occurrences.
  - 8. This permit is issued based on negligible emissions of volatile organic material from the two ethylene oxide sterilizers. For this purpose emissions from each emission source, shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.
  - 9. This permit is issued based on negligible emissions of volatile organic material from three underground storage tanks. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.

Please note that this permit has been revised to show a change in the large ethylene oxide (ETO) to two smaller low-usage units. This revision does not relax monitoring, recordkeeping, or reporting requirements contained in federally enforceable conditions of this permit. This permit continues to assure that this source would not be a major source for purpose of CAAPP.

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If you have any questions on this, please call Dwayne Booker at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

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cc: Illinois EPA, FOS Region 1  
Lotus Notes

**Attachment A - Emissions Summary**

This attachment provides a summary of the maximum emissions from 2 ETO sterilizers, 4 boilers, 5 emergency generators, 3 underground storage tanks, and 3 gas fired dryers 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 source. The resulting maximum emissions are well below the levels, (e.g., 100 tons/year of NO<sub>x</sub>) 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 fuel may be combusted, and control measures are more effective than required in this permit.

Emission Unit	Annual Emissions (Tons/Yr)				
	CO	NO <sub>x</sub>	PM	SO <sub>2</sub>	VOM
4 Boilers (Natural Gas)	21.00	25.00	0.48	0.15	1.38
Boilers #4 and #5 (No. 2 Fuel Oil)	2.25	9.00	0.90	19.17	0.09
3 Dryers	2.48	2.96	0.06	0.02	0.16
Generators 1, 3, and 3	1.33	6.17	0.43	0.14	----
Generators 4 and 5	1.78	6.72	0.21	0.64	0.19
2 Ethylene Oxide Sterilizers					0.88
3 Underground Storage Tanks					<u>1.32</u>
Totals	<u>28.84</u>	<u>49.85</u>	<u>2.08</u>	<u>20.12</u>	<u>4.02</u>

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