

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- RENEWAL

PERMITTEE

Holy Cross Hospital
Attn: Director of Facilities
2701 West 68th Street
Chicago, Illinois 60629

Application No.: 91040030

I.D. No.: 031600EDD

Applicant's Designation:

Date Received: August 16, 2006

Subject: Hospital

Date Issued:

Expiration Date:

Location: 2701 West 68th Street, Chicago, Cook County, 60629

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of the three EtO sterilizers, three gas-fired boilers with #2 fuel oil back-up (Boiler #1: 24.0 mmBtu/hour, Boiler #2: 24.0 mmBtu/hour, and Boiler #3: 48.0 mmBtu/hour), three diesel emergency generators sets (total capacity 2,370 kW), two space heating furnaces and two 15,000 gallon distillate fuel oil storage tanks 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 (FESOP) is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for nitrogen oxides (NO_x) and sulfur dioxide (SO₂)). As a result, the source is excluded from requirements 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 the current permit(s) issued for this location.
- 2a. 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 the requirements of 35 Ill. Adm. Code 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.

- b. Pursuant to 35 Ill. Adm. Code 212.206, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period to exceed 0.15 kg of particulate matter per MW-hour of actual heat input from any fuel combustion emission unit using liquid fuel exclusively (0.10 lbs/mmBtu).
- 3a. Pursuant to 35 Ill. Adm. Code 214.122(b)(2), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hour), burning liquid fuel exclusively to exceed 0.46 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu).
- b. 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 unit to exceed 2000 ppm.
- c. Pursuant to 35 Ill. Adm. Code 214.304, the emissions from the burning of fuel at process emission sources located in the Chicago or St. Louis (Illinois) major metropolitan areas shall comply with applicable Subparts B through F (i.e., 35 Ill. Adm. Code 214.122(b)(2)).
- 4. No person shall 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/hour) to exceed 200 ppm, corrected to 50 percent excess air, pursuant to 35 Ill. Adm. Code 216.121.
- 5a. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 l (250 gal), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with 35 Ill. Adm. Code 218.108, or unless such tank is a pressure tank as described in 35 Ill. Adm. Code 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).
- b. Exception: Pursuant to 35 Ill. Adm. Code 218.122(c), if no odor nuisance exists the limitations of 35 Ill. Adm. Code 218.122 shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F).
- c. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, 218.304 and the following exception: if no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G shall apply only to photochemically reactive material.
- 6a. This permit is issued based on the use of only natural gas and fuel oil #2 for the Boilers and the use of natural gas and fuel oil #2 for the generator sets. The use of any other fuel in the boilers or the

generator sets requires that the Permittee first obtain a construction permit from the Illinois EPA.

- b. At the above location, the Permittee shall not keep, store, or utilize in the boilers and generators at this source:
 - i. Distillate fuel oil (Grades No. 1 and 2) with a sulfur content greater than the large of the following two values:
 - A. 0.28 weight percent, or
 - B. The weight percent give by the formula: Maximum weight percent sulfur = (0.000015) x (Gross heating value of oil, Btu/lb).
 - ii. Organic liquid by-products or waste materials shall not be used in the boilers and generators without written approval from the Illinois EPA.

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

7a Total combined operation of the three boilers shall not exceed the following limits:

- i. Natural Gas Usage: 50 x 10⁶ scf/month and 315 x 10⁶ scf/year.
- ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor</u> (lbs/10 ⁶ scf)	<u>Emissions</u>	
		<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
CO	84.0	2.10	13.23
NO _x	100.0	2.50	15.75
PM	7.6	0.19	1.10
SO ₂	0.6	0.02	0.95
VOM	5.5	0.14	0.87

The above table defines the potential emissions of the boilers and is based on the maximum natural gas usage and standard emission factors given (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- iii. #2 Fuel Oil Usage: 15 x 10³ gallons/month or 15 x 10³ gallons/year.
- iv. Emissions from the combustion of #2 fuel oil.

<u>Pollutant</u>	<u>Emission Factor</u> (lbs/10 ³ Gal)	<u>Emissions</u> (Tons/Month)	<u>Emissions</u> (Tons/Year)
CO	5.0	0.04	0.04
NO _x	20.0	0.15	0.15
PM	2.0	0.02	0.02
SO ₂	142 S	0.30	0.30
VOM	0.2	0.01	0.01

This table defines the potential emissions of the boilers and is based on the maximum distillate fuel oil usage and standard emission factors (Tables 1.3-1 and 1.3-3, AP-42, Fifth Edition, Volume I, Supplement E, September 1998). S indicates that the weight % of sulfur in the oil should be multiplied by the value given.

- b. Total combined operation of the two natural gas fired laundry dryers and two space heating furnaces shall not exceed the following limits:

- i. Natural gas usage: 1 x 10⁶ scf/month and 7.0 x 10⁶ scf/year.
 ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor</u> (lbs/10 ⁶ scf)	<u>Emissions</u> (Tons/Month)	<u>Emissions</u> (Tons/Year)
CO	84.0	0.04	0.29
NO _x	100.0	0.05	0.35
PM	7.6	0.01	0.03
SO ₂	0.6	0.01	0.01
VOM	5.5	0.01	0.02

The above table defines the potential emissions of the laundry dryers and space heaters and is based on the maximum natural gas usage and standard emission factors given (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- c. Total combined operation of the three diesel generator sets shall not exceed the following limits:

- i. #2 Fuel Oil Usage: 2,000 gallons/month and 10,000 gallons/year
 ii. Total combined emissions from emergency diesel generators:

<u>Pollutant</u>	<u>Emission Factor</u> (lbs/mmBtu)	<u>Emissions</u> (Tons/Month)	<u>Emissions</u> (Tons/Year)
CO	0.8500	0.12	0.60
NO _x	3.2000	0.45	2.24
PM	0.1000	0.03	0.07
SO ₂	1.01 S	0.04	0.20
VOM	0.0900	0.01	0.06

This table defines the potential emissions of emergency generators and is based on the maximum fuel usage of the generators, a heat content of 140,000 Btu/gallon for distillate fuel oil, and standard emission factors (Table 3.4-1, AP-42, Fifth Edition, Volume I, Supplement B, October 1996). S indicates that the weight % of sulfur in the oil should be multiplied by the value given.

- d. Total combined operation of the three Ethylene Oxide Sterilizers shall not exceed the following limits:

EtO Usage		EtO Emissions	
<u>(lbs/Month)</u>	<u>(lbs/Year)</u>	<u>(lbs/Month)</u>	<u>(lbs/Year)</u>
45	450	12	121

This table defines the potential emissions of ethylene oxide from three sterilizers. These limits are based on uncontrolled emissions from unit #1 and controlled EtO emissions from units #2 and 3.

- e. This permit is issued based on negligible emissions of VOM from the two distillate fuel oil storage tanks. For this purpose, emissions of VOM from each storage tank shall not exceed nominal emission rates of 0.05 lbs/hour and 0.22 tons/year.
 - f. Compliance with the annual limits of this permit 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).
8. This permit is issued based on the Potential to Emit (PTE) for Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act being less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program (CAAPP) Permit.
- 9a. 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. Pursuant to 35 Ill. Adm. Code 212.107, for both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR Part 60, Appendix A, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301, pursuant to 35 Ill. Adm. Code 212.107.
- c. Pursuant to 35 Ill. Adm. Code 212.109, except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the roadways and parking areas the number of readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged, pursuant to 35 Ill. Adm. Code 212.109.
- d. Pursuant to 35 Ill. Adm. Code 212.110(a), measurements of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR Part 60, Appendix A, Methods 5, 5A, 5D, or 5E, pursuant to 35 Ill. Adm. Code 212.110(a).
- e. Pursuant to 35 Ill. Adm. Code 212.110(b), the volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4, pursuant to 35 Ill. Adm. Code 212.110(b).
- f. 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, pursuant to 35 Ill. Adm. Code 212.110(c).

- g. Testing required by Condition 9 shall be performed by a qualified independent testing service.
10. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
11. 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.
12. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified in 35 Ill. Adm. Code 218.119 shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 Ill. Adm. Code Part 218 other than those required by

maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.

- 13a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
 - i. Natural gas usage (10^6 scf/month and 10^6 scf/year);
 - ii. #2 fuel usage (gallons/month and 10^3 gallons/year);
 - iii. Records of sulfur content in each shipment of the distillate fuel oil (weight %);
 - iv. Ethylene oxide usage (lbs/month and lbs/year);
 - v. Monthly and annual emissions of CO, NO_x, PM, SO₂, VOM and HAPs with supporting calculations (tons/month and tons/year).
- 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.
14. If there is an exceedance of or a 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 record keeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
15. 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.
16. 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

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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 on this, please call German Barria at 217/782-2113.

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

Date Signed: _____

ECB:GB:jws

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from the hospital equipment 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 per year of nitrogen oxides (NO_x) and 100 tons per year for sulfur dioxide (SO₂)) 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.

E M I S S I O N S (Tons/Year)					
<u>Emission Unit</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>
3 Boilers					
Natural Gas	13.23	15.75	1.10	0.95	0.87
Distillate Fuel Oil	0.04	0.15	0.02	0.30	0.01
Laundry Dryers and Space					
Heating Furnaces	0.29	0.35	0.03	0.01	0.02
3 Diesel Generator Sets	0.60	2.24	0.07	0.20	0.06
3 Ethylene Oxide Sterilizers	--	--	--	--	0.06
2 Distillate Fuel Oil Storage					
Tanks	--	--	--	--	<u>0.44</u>
Totals	14.16	18.49	1.22	1.46	<u>1.46</u>

GB: jws