

3. This permit is issued based on emissions of sulfur dioxide (SO₂) from each #2 diesel fuel combustion emission unit not exceeding 0.3 lb/mmBtu, pursuant to 35 Ill. Adm. Code 214.122(b)(2).
- 4a. Operation of the boilers shall not exceed the following limits:
 - i. Natural Gas Usage: 2,800,000 therms/year.
 - ii. No. 2 Fuel Oil Usage: 60,000 gallons/year.
 - iii. These limits define the potential emissions of nitrogen oxides from the boilers and are based on the actual emissions determined from the maximum capacity and standard emission factors.
- b. At the above location, the Permittee shall not keep, store, or utilize distillate fuel oil (Grades No. 1 and No. 2) with a sulfur content greater than the larger of the following values:
 - i. 0.28 weight percent, or
 - ii. The wt. percent given by the formula:
$$\text{Maximum wt. percent sulfur} = (0.000015) \times (\text{Gross heating value of oil, Btu/lb}).$$
- c. Organic liquid by-products or waste materials shall not be used at this source without written approval from the Illinois EPA.
- d. The Permittee shall notify the Illinois EPA prior to any change in the type of fuel used at the source.
- e. 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.
5. Emissions and operation of the 4 ethylene oxide sterilizers shall not exceed the following limits:
 - a. Sterilizer Gas Usage and Emissions: 8 lbs/hour and 0.82 tons/year
 - b. These limits define the maximum emissions of the ethylene oxide sterilizers and are based on the actual emissions determined from the maximum gas usage and Ill. Adm. Code 208.301.
- 6a. Within 90 days of a written request from the Agency, pursuant to 35 Ill Adm. Code Section 201.282, the emissions and opacity of the boilers from the plant shall be measured by an approved testing service, during conditions which are representative of the maximum performance. The Agency 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 90 days.

- b. i. The following methods and procedures shall be used for testing of emissions. Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter	USEPA Method 5
Nitrogen Oxides	USEPA Method 7
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10

- ii. A test shall consist of three separate runs each at least 60 minutes in duration. Compliance shall be determined from the average of the runs provided that the Agency may accept the arithmetic mean of the two runs in circumstances described in 40 CFR 60.8(f).
- c. Testing shall be performed by a qualified independent testing service.
- d. At least 30 days prior to the actual date of testing a written test plan shall be submitted to the Agency for review and approval. A copy shall also be submitted to the USEPA. This plan shall describe the specific procedures for testing, including:
 - i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum operating rate, the levels of operating parameters at or within which compliance is intended to be shown, if applicable, and the means by which the operating parameters for the process and any control equipment will be determined.
- e. The Agency shall be notified prior to these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the tests. The Agency may, at its discretion, accept notification with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe the testing.
- 7a. The Final Report(s) for all tests shall be submitted within 180 days after the date of the test. The Final Report shall include as a minimum:
 - i. General information describing the test, including the name and identification of the emission source which was tested, date of

test, names of personnel performing the tests, and Agency observers, if any;

- ii. A summary of results;
 - iii. Description of test procedures, including description of sampling points, test equipment, and test schedule;
 - iv. Detailed description of test conditions, including:
 - A. Process information, i.e., process rate, aggregate type, fuel type, and firing rate.
 - B. Control equipment information, i.e., equipment condition and operating parameters during testing.
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
- b. Submittals of information shall be made as follows:
- i. Notices of Test - two copies to Compliance Section and one copy to the Regional Office.
 - ii. Final Report - two copies to Compliance Section and one copy to the Regional Office.

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

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Des Plaines, Illinois 60016

- 8. The emissions of HAPs as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year establish by rule which would require the Permittee to obtain a Clean Air Act Permit Program permit from the Illinois EPA. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a Clean Air Act Permit Program permit from the Illinois EPA.
- 9. The Permittee shall maintain records of the following items for the source:
 - a. The use of natural gas in the boilers, therms/month and therms/year (running total);

- b. The use of No. 2 fuel oil in the boilers, gallons/month and gallons/year (running total);
 - c. The amount of sterilizer gas used in the sterilizers, lbs/hour and tons/year (running total);
 - d. Operating hours of generator (hours/year); and
 - e. Sulfur content of diesel fuel (% by wt.).
10. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA 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 request for records during the course of a source inspection.
11. If there is an exceedance of the requirements of this permit as determined by the record required by this permit, the Permittee shall submit a report to the Agency's Compliance Section in Springfield, Illinois within 30 days after the exceedance. 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 violation and efforts to reduce emissions and future occurrences.
12. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

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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:

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13. For purposes of fees pursuant to Section 9.6 of the Illinois Environmental Protection Act, annual emissions of regulated air pollutants, i.e., particulate matter, nitrogen oxides, carbon monoxide, volatile organic material, and sulfur dioxide, shall not exceed 100 tons, which shall be the permitted emissions of this site.

14. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year: natural gas, fuel oil usage and sulfur content for the boilers and generator, and sterilizer gas usage from the prior calendar year.

Please note that a diesel generator and fourth ETO sterilizer have been added to this permit.

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

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

DES:RBS:psj

cc: Illinois EPA, FOS, Region 1
Illinois EPA Compliance Section
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from the hospital 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 (this is handling 2,800,000 therms of natural gas and 60,000 gallons of fuel oil annually). The resulting maximum emissions are well below the levels, e.g., 100 tons per year of nitrogen oxide (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.

- 1a. Natural gas combustion emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO₂), and particulate matter (PM) from the boilers:

<u>Pollutant</u>	<u>Fuel Usage (Therms/Yr)</u>	<u>Emission Factor (Lb/Therm)</u>	<u>Emissions (Ton/Yr)</u>
NO _x	2,800,000	0.0140	19.60
CO		0.0035	4.90
VOM		0.0003	0.40
SO ₂		0.0001	0.10
PM		0.0014	<u>1.92</u>
		Total	26.92

- b. No. 2 fuel oil combustion emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO₂) and particulate matter (PM) from the boilers:

<u>Pollutant</u>	<u>Fuel Usage (Gallons/Yr)</u>	<u>Emission Factor (Lb/Gallon)</u>	<u>Emissions (Ton/Yr)</u>
NO _x	60,000	0.0200	0.60
CO		0.0050	0.15
VOM		0.0020	0.01
SO ₂		0.0002	1.20
PM		0.0398	<u>0.06</u>
		Total	2.02

- c. These tables define the potential emissions of the boilers and are based on the fuel fired and standard emission factors at the maximum annual fuel usage.

2. Emissions and operation of four ethylene oxide sterilizers with abators:

<u>Sterilizer Gas Usage</u>		<u>Volatile Organic Material Emissions</u>	
<u>(Lbs/Hour)</u>	<u>(Tons/Year)</u>	<u>(Lbs/Hour)</u>	<u>(Tons/Year)</u>
8	0.82	8	0.82

3. Emissions and operation of the generator shall not exceed the following limits:

Operating Hours (Hours/Yr)	NO _x (Tons/Mo)	E M I S S I O N S (Tons/Yr)	CO (Tons/Mo)	(Tons/Yr)	(Tons/Mo)	SO ₂ (Tons/Yr)
150	0.5	4.8	0.1	1.1	0.05	0.5

These limits are based on maximum rating of 2000 kW and standard AP-42 emission factors for diesel fuel generators. Compliance shall be determined from a running total of the previous 12 months data.

4. The emissions of HAPs as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year establish by rule which would require the Permittee to obtain a Clean Air Act Permit Program permit from the Agency. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a Clean Air Act Permit Program permit from the Illinois EPA.

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