

217/782-2113

CONSTRUCTION PERMIT - NSPS

PERMITTEE

Central DuPage Hospital
Attn: Steve Robinson
25 North Winfield Road
Winfield, Illinois 60190

Application No.: 04090031

I.D. No.: 043115AAA

Applicant's Designation: BLR-3, BLR04, & BLD-6 Date Received: September 10, 2004

Subject: Boilers and Emergency Generators

Date Issued: February 23, 2005

Location: 25 North Winfield Road, Winfield

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of four 32.66 mmBtu/hr dual fuel boilers and 3 emergency generators as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit is issued based on the source being less than major source thresholds (i.e., 100 tons/year for SO₂ and NO_x). As a result the source is excluded from the requirements of Potential for Significant Deterioration (PSD) 40 CFR 52.21. 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.
2. The boilers storage tank(s) are subject to New Source Performance Standards (NSPS), 40 CFR 60 Subparts A and Dc. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
 - a. Sulfur dioxide emissions from the boiler shall not exceed the applicable limit, pursuant to the NSPS, 40 CFR 60.44(c).
 - b. Opacity from the boiler shall not exceed 20% opacity (6-minute average) during normal operation except for one 6-minute period per hour of not more than 27% opacity, pursuant to the NSPS, 40 CFR 60.43(c).
 - c. At all times, the Permittee shall maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, as required by the NSPS, 40 CFR 60.11(d).
 - d. The Permittee shall fulfill applicable notification and record keeping requirements of the NSPS, 40 CFR 60.7 and 60.48c.

3. Pursuant to 35 Ill. Adm. Code Section 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 10 mmBtu/hour to exceed 200 ppm, corrected to 50 percent excess air.
4. The Permittee shall not utilize distillate fuel oil (Grades No. 1 and 2) in the boiler and generators with a sulfur content greater than the larger of the following two values pursuant to 35 Ill. Adm. Code 214:
 - a. 0.28 weight percent, or
 - b. The wt. percent given by the formula: 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 in these fuel combustion emission sources.
 - d. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
5. Operation and emission each unit of the four boilers shall not exceed the following limits:
 - a. Natural Gas Usage: 24.7 mmscf/month, 286 mmscf/year

<u>Pollutant</u>	<u>Emission Factor</u> (Lb/mmscf)	<u>Emissions</u>	
		(Tons/Mo)	(Tons/Yr)
Nitrogen Oxides (NO _x)	35	0.504	5.04
Carbon Monoxide (CO)	37	0.521	5.21
Particulate Matter (PM)	10	0.143	1.43
Volatile Organic Material (VOM)	16	0.229	2.29
Sulfur Dioxide (SO ₂)	1	0.014	0.14

These limits are based on the maximum boiler operation 8,760 hours per year each boiler, and emission factors given from manufacture's data. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- b. Fuel Oil Usage: 188,570 gallons/month, 613,985 gallons/year

<u>Pollutant</u>	<u>Emission Factor</u> (Lb/1,000 Gal)	<u>Emissions</u>	
		(Tons/Mo)	(Tons/Yr)
Nitrogen Oxides (NO _x)	26.5	2.500	8.14
Carbon Monoxide (CO)	10.1	0.945	3.08
Particulate Matter (PM)	3.5	0.325	1.06
Volatile Organic Material (VOM)	4.3	0.405	1.32
Sulfur Dioxide (SO ₂)	73.6	6.938	22.61

These limits are based on the maximum boiler operation, 2,688 hours per year each boiler, and emission factors given from manufacture's

data. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- 6a. Diesel fuel shall be the only fuel fired in the generator. The use of any other fuel shall require a revised permit.
- b. Emissions and operation for each unit of all three emergency generators shall not exceed the following limits:

<u>Pollutant (Total all Three Units)</u>	<u>Diesel Fuel Usage (Each Unit)</u>		<u>Operating Hours</u>	
	<u>(Gallons/Hour)</u>	<u>(Gallons/Year)</u>	<u>(Hours/Mo)</u>	<u>(Tons/Yr)</u>
	150	22,500	150	
			<u>Emission Factors</u>	
			<u>(Lbs/BHP-Hr)</u>	<u>(Tons/Yr)</u>
Nitrogen Oxides (NO _x)			0.0236	5.03
Carbon Monoxide (CO)			0.0017	0.36
Sulfur Dioxide (SO ₂)			0.0024	0.50
Particulate Matter (PM)			0.0002	0.05
Volatile Organic Material (VOM)			0.0003	0.07

These limits are based on engine manufacturer's emission data, the use of diesel fuel, and an applicant requested limit of 150 hours per year. Compliance with annual limits shall be determined from a running total of 12 months of data.

- 7a. The new boilers and generators shall not begin operation until construction, including construction of any air pollution control equipment, is complete, and reasonable measures short of actual operation have been taken to verify proper operation.
- b. Operation of the boilers and generators is allowed for 180 days after initial start-up of operation under this construction permit. Within this time period, or within 60 days after achieving maximum firing rate, whichever occurs first, the Permittee shall conduct initial performance tests in accordance with Condition 8.
- 8a. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: Refer to 40 CFR 60, Appendix A, and 40, Appendix B 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
Sulfur Dioxide	USEPA Method 6, 6a, 6b, or 6c

- b. The performance test(s) and monitoring requirements for sulfur dioxide emissions may be met by sampling and analyzing in the initial tank of oil and demonstrating that it contains less than the required weight percent sulfur. There after, the tank shall be sampled and analyzed after each new shipment of oil, as specified in 40 CFR 60.44.c

Alternatively, the Permittee shall comply by meeting the fuel supplier certification requirements described in 40 CFR 60.48c.

- c. The performance test(s) required to evaluate compliance with 40 CFR 60.43(c) shall be conducted in accordance with 40 CFR 60.45(c) (7), USEPA Method 9, the determination of opacity from stack emissions. Satisfactory completion of these tests is a prerequisite to the issuance of an operating permit.
 - d. Copies of the Final Reports for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized.
9. 30 days after completion of sampling, the Final Report shall include as a minimum:
- a. A summary of results.
 - b. General information.
 - c. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.
 - d. Detailed description of test conditions, including:
 - i. Process information, i.e., mode(s) of operation, process rate, e.g. fuel or raw material consumption;
 - ii. Control equipment information, i.e., equipment condition and operating parameters during testing; and
 - iii. A discussion of any preparatory actions taken, i.e., inspections, maintenance and repair.
 - e. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - f. An Explanation of any discrepancies among individual tests of anomalous data.
10. The Illinois EPA shall be notified prior to these tests. Notification of 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 test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notification if it interferes with the Illinois EPA's ability to observe testing.
11. The Permittee shall maintain monthly records of the following items:
- a. Natural Gas Usage in the boilers (mmscf/month and mmscf/year);
 - b. Fuel oil usage in the boilers (gal/month and gal/year);

- c. Generator operating hours (hrs/month and hrs/year);
 - d. Diesel fuel usage in the generators (gal/month and gal/year); and
 - e. Emissions of CO, NO_x, PM, SO₂, and VOM from the boilers and generators with supporting calculations (tons/month and tons/year).
12. 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.
13. If there is an exceedance of 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. 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.
14. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system 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 on this, please call George Kennedy at 217/782-2113.

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

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cc: Region 1

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions of the boilers and generators operating in compliance with the requirements of this construction permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from the source. These maximum emissions from the boilers and generators utilize annual operation hour of 8,760 hrs for boilers operating with natural gas, 2,688 hrs for boilers operating with #2 oil, and 150 hrs for generators operating with #2 oil. The resulting maximum emissions are below the threshold levels (e.g., 100 tons/yr for NO_x, 100 tons/yr for SO₂, 100 tons/yr for CO, and 100 tons/yr for PM) at which this project would be considered a new major source or a major modification for the purposes of 40 CFR 52.21, Prevention of Significant Deterioration (PSD). Actual emissions from this source will be less than predicted in this summary to the extent that the hours of operation are less than that allowed in this permit.

<u>Emissions Unit</u>	<u>Fuel</u>	E M I S S I O N S (Tons/Year)				
		<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>PM</u>	<u>VOM</u>
4 Boilers	Natural Gas	20.16	20.84	0.56	5.72	9.16
	#2 Oil	32.56	12.32	90.44	4.24	5.28
3 Generators	#2 Oil	<u>15.09</u>	<u>1.08</u>	<u>1.5</u>	<u>0.15</u>	<u>0.21</u>
Total Emissions		67.81	34.24	92.5	10.11	14.65

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