

(217) 782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

The Art Institute  
Attn: Charles Drake  
111 South Michigan Avenue  
Chicago, Illinois 60603

Application No.: 03070011

I.D. No.: 031600CVA

Applicant's Designation:

Date Received: July 3, 2003

Subject: Art Museum and Institute

Date Issued:

Expiration Date:

Location: 111 South Michigan Avenue (main location), Chicago

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of two natural gas-fired boilers (B01, B02) with residual oil back-up (29.3 mmbtu/hr each), two natural gas-fired boilers (B03, B04) with distillate oil back-up (16.8 mmbtu/hr combined), ten natural gas-fired boilers (B05 - B14; 17.7 mmbtu/hr combined), and two natural gas-fired reciprocating engine/generators (973 hp each) 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., less than 100 tons/year for nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>)), as further described in Attachment A. As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program 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 permit(s) issued for this location.
2. This permit is issued based upon the boilers B01 and B02 not being subject to New Source Performance Standard (NSPS) for Small Industrial - Commercial - Institutional Steam Generating Units, 40 CFR 60, Subpart A and Dc as being constructed before June 9, 1989.
3. Emission of sulfur dioxide (SO<sub>2</sub>) from burning fuel oil shall not exceed 1.0 lb/mmbtu when burning residual oil and 0.3 lb/mmbtu when burning distillate oil pursuant to 35 Ill. Adm. Code 214.122.
4. Operation and emissions of the boilers (combined) shall not exceed the following limits:

- a. Natural Gas Usage: 45 mmscf/mo, 450 mmscf/yr

<u>Pollutant</u>	<u>Emission Factor (lb/mmscf)</u>	<u>Emissions (ton/mo) (ton/yr)</u>	
Nitrogen Oxides (NO <sub>x</sub> )	100	2.3	22.5
Carbon Monoxide (CO)	84	1.9	18.9
Particulate Matter (PM)	7.6	0.2	1.7
Volatile Organic Materials (VOM)	5.5	0.1	1.2

- b. Residual Fuel Oil #6 Usage: 300,000 gal/mo, 1,200,000 gal/yr

<u>Pollutant</u>	<u>Emission Factor (Lb/10<sup>3</sup> gal)</u>	<u>Emissions (ton/mo) (ton/yr)</u>	
Sulfur Dioxide (SO <sub>2</sub> )	78.5	11.8	47.1
Nitrogen Oxides (NO <sub>x</sub> )	55	8.3	33.0
Carbon Monoxide (CO)	5	0.8	3.0
Particulate Matter (PM)	10	1.5	6.0
Volatile Organic Materials (VOM)	0.76	0.1	0.5

- c. Destillate Fuel Oil #2 Usage: 100,000 gal/mo, 1,050,000 gal/yr

<u>Pollutant</u>	<u>Emission Factor (Lb/10<sup>3</sup> gal)</u>	<u>Emissions (ton/mo) (ton/yr)</u>	
Sulfur Dioxide (SO <sub>2</sub> )	42.6	2.1	22.4
Nitrogen Oxides (NO <sub>x</sub> )	20	1.0	10.5
Carbon Monoxide (CO)	5	0.3	2.6
Particulate Matter (PM)	2	0.1	1.1
Volatile Organic Materials (VOM)	0.2	0.01	0.1

These limits are based on the maximum operating rate, standard emission factors given by AP-42 and sulfur content of residual fuel oil 0.5% and distillate fuel oil 0.3%. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

5. Operation and emissions of the two engine/generators (combined) shall not exceed the following limits:

Operating Hours (for both engines combined): 100 hr/mo, 100 hr/yr

<u>Pollutant</u>	<u>Emission Factor (Lb/Eng-Hr)</u>	<u>Emissions (ton/mo) (ton/yr)</u>	
Nitrogen Oxides (NO <sub>x</sub> )	15.0	0.8	0.8
Carbon Monoxide (CO)	60.0	3.0	3.0

These limits are based on the maximum operating rate and engine manufacturer emission factors. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

6. The Permittee shall maintain records of the following items:

- a. Natural gas usage (mmscf/month and mmscf/year) separately for boilers and engines;
- b. Fuel oil usage (gal/month and gal/year) by grades;

- c. Hours of operation of engines (hrs/month and hrs/year).
7. 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 and 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 request for records during the course of a source inspection.
8. 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 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.
9. The Permittee shall submit the following additional information from the prior calendar year, along with the Annual Emissions Report, due May 1st of each year:
  - a. Boilers natural gas usage (mmscf/year);
  - b. Fuel oil usage (gallons/year); and
  - c. Engines operating hours (hours/year).
10. 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)  
1340 North Ninth Street  
P.O. Box 19276  
Springfield, IL 62794-9276

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

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

Please note that painting operations and two fuel oil storage tanks are exempt from state permit requirements pursuant to 35 Ill. Adm. Code 201.146(tt), (yy) and (n)(3).

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

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

DES:VJB

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

Attachment A - Emission Summary

This attachment provides a summary of the maximum emission from the art museum and institute 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 source. This is combustion of 450 mmscf of natural gas, 1,200,000 gallons of residual fuel oil and 1,050,000 gallons of distillate fuel oil in the boilers and 100 hours of combined engines operations. The resulting maximum emissions are well below 100 tons per 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 material is handled, and control measures are more effective than required in this permit.

E M I S S I O N S  
(tons/yr)

	NO <sub>x</sub>	SO <sub>2</sub>	CO	PM	VOM
Emission Units					
All Boilers					
Natural Gas	22.5	--	18.9	1.7	1.2
Boilers B01, B02					
Residual Fuel Oil	33.0	47.1	3.0	6.0	0.5
Boilers B03, B04					
Distillate Fuel Oil	10.5	22.4	2.6	1.1	0.1
Engine/Generators	0.8	--	3.0	--	--
Total	66.8	69.5	27.5	7.7	1.8

VJB: