



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

St. Joseph Hospital)
Penobscot County)
Bangor, Maine)
A-237-71-M-M)

Departmental
Finding of Fact and Order
Air Emission License
Amendment #1

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

St. Joseph Hospital (SJH) of Bangor, Maine was issued Air Emission License A-237-71-L-R on January 30, 2008, permitting the operation of air emission sources associated with their health-care facility.

SJH has requested a minor revision to their License in order to change the fuel fired in the Boiler #1-#4 from #5 fuel oil to both #2 fuel oil and Natural Gas.

B. Emission Equipment

The following air emission units are addressed in this amendment:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBTU/hr)</u>	<u>Fuel Type</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Stack</u>
Boiler #1	5.3	#2 Fuel Oil Natural Gas	37.9 5196	1
Boiler #2	5.3	#2 Fuel Oil Natural Gas	37.9 5196	1
Boiler #3	10.5	#2 Fuel Oil Natural Gas	75 10,295	1
Boiler #4	10.5	#2 Fuel Oil Natural Gas	70 10,295	1

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AUGUSTA, MAINE 04333-0017
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RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
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C. Application Classification

This amendment will increase emissions by less than 4 ton/year for each single pollutant and less than 8 ton/year for all pollutants combined. Therefore, this modification is determined to be a minor revision and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 24, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 24, 2005). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boilers #1, #2, #3 and #4

St. Joseph Hospital operates four boilers to provide hospital building heat and hot water. Boilers #1 and #2 have design heat input capacities of 5.3 MMBtu/hr each and Boilers #3 and #4 have design heat input capacities of 10.5 MMBtu/hr each. All four oil-fired boilers were installed in 1963. They are therefore not subject to New Source Performance Standards (NSPS) 40 CFR Part 60 Subpart Dc, for boilers with heat inputs greater than 10 MMBtu/hr and constructed after June 9, 1989.

BACT for Boilers #1, #2, #3 and #4 is the following when firing #2 fuel oil:

1. *Low Sulfur Fuel*, 06-096 CMR 106 (last amended June 9, 1999) regulates fuel sulfur content. However the use of #2 fuel oil which meets the criteria in ASTM D396 is more stringent and shall be considered BACT.
2. *Fuel Burning Equipment Particulate Emission Standard*, 06-096 CMR 103 (last amended November 3, 1990) regulates PM emission limits. However, a PM emission limit of 0.08 lb/MMBtu is more stringent and shall be considered BACT. The PM₁₀ limits are derived from the PM limits.
3. NO_x, CO and VOC emission limits based upon AP-42 data dated 9/98 for oil-fired boilers.

4. Visible emissions from the combined stack serving Boilers #1, #2, #3 and #4 (stack #1) shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1), six (6) minute block average in a 3 hour period.

BACT for Boilers #1, #2, #3 and #4 is the following when firing Natural Gas:

5. 06-096 CMR 106 regulates fuel sulfur content. However the use of Natural Gas is more stringent and shall be considered BACT.
6. 06-096 CMR 103 regulates PM emission limits. However, a PM emission limit of 0.05 lb/MMBtu is more stringent and shall be considered BACT. The PM₁₀ limits are derived from the PM limits.
7. NO_x, CO and VOC emission limits based upon AP-42 data dated 7/98 for the combustion of Natural Gas.
8. Visible emissions from the combined stack serving Boilers #1, #2, #3 and #4 (stack #1) shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1), six (6) minute block average in a 3 hour period.

C. Annual Facility Emissions

1. Boilers #1, #2, #3 and #4 shall not exceed a combined total of 45,000 MMBtu of #2 fuel oil or Natural Gas on a 12-month rolling total basis.
2. Annual emissions are based on the worst-case scenario of firing 100% #2 fuel oil for PM, SO₂, NO_x, and VOC, and firing 100% Natural Gas for CO in the boilers.
3. Each emergency generator shall not operate for more than 150 hours per 12-month rolling year.
4. The following emissions shall not be exceeded on a 12-month rolling total:

Total Annual Licensed Emissions for the Facility
Tons/Year
 (used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers	1.80	1.80	11.35	3.22	1.85	0.09
Generator #5	0.03	0.03	0.01	1.22	0.26	0.10
Generator #6	0.05	0.05	0.02	1.34	0.36	0.04
Total TPY	1.88	1.88	11.38	5.78	2.47	0.23

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III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Based on the total facility emissions, St. Joseph Hospital is below the emissions level required for modeling and monitoring.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-237-71-M-M subject to the conditions found in Air Emission License A-237-71-L-R and the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following shall replace Condition 16 in Air Emission License A-237-71-L-R

(16) Boilers #1, #2, #3 and #4

1. Combined fuel use for the boilers shall not exceed 45,000 MMBtu of Natural Gas or #2 fuel oil that meets the criteria in ASTM D396 on a 12 month rolling total. Compliance shall be demonstrated by fuel records from the supplier documenting the type and quantity of fuel delivered. Records of annual fuel use shall be kept on a 12-month rolling total basis. [06-096 CMR 115, BPT].
2. Boilers #1 - #4 shall each have a PM emission limit of 0.08 lb/MMBtu when firing #2 fuel oil, and a PM emission limit of 0.05 lb/MMBtu when firing Natural Gas. [06-096 CMR 103]

3. Emissions shall not exceed the following when firing #2 fuel oil: [06-096 CMR 115, BPT]

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.42	0.42	2.67	0.76	0.19	0.02
Boiler #2	0.42	0.42	2.67	0.76	0.19	0.02
Boiler #3	0.84	0.84	5.29	1.50	0.38	0.04
Boiler #4	0.84	0.84	5.29	1.50	0.38	0.04

4. Emissions shall not exceed the following when firing Natural Gas: [06-096 CMR 115, BPT]

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.27	0.27	0.01	0.52	0.44	0.03
Boiler #2	0.27	0.27	0.01	0.52	0.44	0.03
Boiler #3	0.53	0.53	0.01	1.03	0.86	0.06
Boiler #4	0.53	0.53	0.01	1.03	0.86	0.06

5. Visible emissions from the combined stack that serves Boilers #1 - #4 (stack #1) shall not exceed 10% opacity on a 6 minute block average basis, except for no more than one (1), six (6) minute block average in a 3 hour period. [06-096 CMR 101]

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The following is a new Condition:

- (1) SJH shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS *22nd* DAY OF *January* 2009.
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *James P. Brockley*
DAVID P. LITTELL, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-237-71-L-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 10/28/2008

Date of application acceptance: 11/6/2008

Date filed with the Board of Environmental Protection: _____

This Order prepared by Jonathan Voisine, Bureau of Air Quality.

