



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

BETH NAGUSKY
ACTING COMMISSIONER

**Millinocket Regional Hospital
Penobscot County
Millinocket, Maine
A-493-71-J-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #2**

After review of the air emissions license amendment 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., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. Millinocket Regional Hospital (MRH) was issued Air Emission License A-493-71-H-R on 10 August 2006, permitting the operation of emission sources associated with their healthcare facility. The license was subsequently amended on 15 August 2007 (A-493-71-I-M).
2. The equipment addressed in this license is located at 200 Somerset Street, Millinocket, ME.
3. MRH has requested an amendment to their license to replace three boilers, LPB-1, with a 4.5 MMBtu/hr, #2 fired boiler, and HP-1, HP-2, with two electrically powered steam boilers, and to replace their emergency generator; and to amend the basis of record keeping from a 12-month rolling total to a calendar year.

B. Emission Equipment

The following equipment is addressed in this air emission license:

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
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
PRESQUE ISLE, MAINE 04679-2094
(207) 764-0477 FAX: (207) 760-3143

Boilers

<u>Equipment</u>	<u>Maximum Capacity</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
LPB-1 (New)	4.5 MMBtu/hr	32.1	#2 fuel oil, 0.5% S	1
LPB-2 (Existing)	4.5 MMBtu/hr	32.1	#2 fuel oil, 0.5% S	1
LPB-3 (Existing)	4.5 MMBtu/hr	32.1	#2 fuel oil, 0.5% S	1
LB-100 (New)	100 kW	Electrically powered, included		N/A
LB-180 (New)	180 kW	for inventory completeness only		N/A

Electrical Generation Equipment

<u>Equipment</u>	<u>Horse Power (HP)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % Sulfur</u>	<u>Stack #</u>
Generator #1 (New)	835	42.7	Diesel, 0.0015%	G-1

C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Sig. Level (TPY)</u>
PM	1.73	4.51	2.78	100
PM ₁₀	1.73	1.51	2.78	100
SO ₂	6.93	5.97	-0.97	100
NO _x	4.68	17.38	12.7	100
CO	1.08	1.71	0.63	100
VOC	0.27	0.32	0.05	50

This modification is determined to be a minor modification 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 (as amended). 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 (as amended).

BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boiler LPB-1

Boiler LPB-1 (new) is a V11 Series Burnham Commercial cast iron boiler, equipped with a Riello RL-100/M burner with a rated heat input capacity of 4.5 MMBtu/hr, firing #2 oil, installed in 2010. Because of its size, it is not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BACT analysis for Boiler LPB-1 is the following:

1. The total fuel use for the facility shall not exceed 190,000 gallons per year of ASTM D396 compliant #2 fuel oil, with a maximum sulfur content not to exceed 0.5% by weight, based on a calendar year.
2. *Low Sulfur Fuel*, 06-096 CMR 106 (as amended) regulates fuel sulfur content, however in this case it was determined a more stringent limit of 0.5% by weight was BACT and therefore shall be used.

3. The SO₂ emission limits are based on the firing of fuel which meets the criteria in ASTM D396 for #2 fuel oil.
4. *Fuel Burning Equipment Particulate Emission Standard*, 06-096 CMR 103 (as amended) regulates PM emission limits. The PM₁₀ limits are derived from the PM limits.
5. NO_x emission limits are based on data from similar #2 oil fired boilers of this size and age.
6. CO and VOC emission limits are based upon AP-42 data dated 9/98.
7. Visible emissions from the common stack serving the three boilers shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

C. NSPS Generator

MRH operates an emergency generator.

Emergency Generator is defined as any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary engines used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary engines used to pump water in the case of fire or flood. Stationary engines used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Emergency Generator #1 is a CAT C18, 600 kW unit, firing 42.7 gallons per hour of diesel fuel. Generator #1 was ordered after July 11, 2005 and manufactured after April 1, 2006. Therefore, Emergency Generator #1 is subject to New Source Performance Standards 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.

Emergency Generator #1 is not subject to the provisions 40 CFR Part 63, Subpart ZZZZ, because of the nature of MRH operations. Subpart ZZZZ (63.6590(b)(3)) excludes residential, institutional and commercial uses; health care facilities are defined as an institutional use.

A summary of the BACT analysis for Emergency Generator #1 is the following:

1. Emergency Generator #1 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.

2. Emergency Generator #1 shall be limited to 100 hours per year for maintenance checks and readiness testing. Emergency Generator #1 shall be limited to 500 hours per year of total operation. Both of these limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours.
3. Emergency Generator #1 shall be equipped with a non-resettable hour meter.
4. PM, NO_x, CO, and VOC emission limits are based upon the Manufacturer's Emission data.
5. MRH shall operate and maintain Emergency Generator #1 in accordance with the manufacturer's written instructions. MRH shall not change settings that are not approved in writing by the manufacturer.
6. Visible emissions from the Emergency Generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

D. Annual Emissions

MRH shall be restricted to the following annual emissions, based on a calendar year and the following:

- Total facility use of 190,000 gallons of ASTM D396 compliant #2 fuel
- 500 hours operation of Emergency Generator #1 firing diesel fuel with sulfur content not to exceed .0015%.

Total Licensed Annual Emissions for the Facility

Tons per year

(Used to calculate the annual license fee)

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boilers LPB-1 (New), LPB-2 & NPL-3 (existing)	1.42	1.42	5.94	1.69	0.42	0.05
Emer. Gen. #1 (new)	0.09	0.09	0.02	15.69	1.29	0.27
Total TPY	1.5	1.5	6.0	17.4	1.7	0.3

III. AMBIENT AIR QUALITY ANALYSIS

Based on the total facility licensed emissions, MRH 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-493-71-J-A subject to the conditions found in Air Emission License A-493-71-H-R, in amendments A-493-71-I-M, and in 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.

The following shall replace Conditions (16) in A-493-71-H-R and A-493-71-I-M and (17) in Air Emission License A-493-71-H-R:

(16) Boilers LPB-1 (New), LPB-2 and LPB-3

- A. MRH shall not exceed a facility-wide fuel limit of 190,000 gallons per calendar year of ASTM D396 compliant fuel oil, with a maximum sulfur content not to exceed 0.5% by weight. Records from the supplier documenting quantity delivered and sulfur content shall be kept for compliance purposes. [06-096 CMR 115]
- B. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
LPB-1 (New)	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
LPB-2	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
LPB-3	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

C. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
LPB-1 (New)	0.54	0.54	2.27	0.64	0.16	0.02
LPB-2	0.54	0.54	2.27	0.64	0.16	0.02
LPB-3	0.54	0.54	2.27	0.64	0.16	0.02

D. Visible emissions from the common stack serving the three boilers shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1), six (6) minute block average in a continuous three (3) hour period. [06-096 CMR 101]

(17) **NSPS Emergency Generator**

- A. Emergency Generator #1 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm. [40 CFR 60.4207(b)]
- B. Emergency Generator #1 shall be limited to 100 hours per year of operation for maintenance checks and readiness testing. Emergency Generator #1 shall be limited to 500 hours per year of total operation. Both of these limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR 60.4211(E) and 06-096 CMR 115, BACT]
- C. Emergency Generator #1 shall be equipped with a non-resettable hour meter. [40 CFR 60.4209(a)]
- D. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Emer. Gen. #1	PM	0.06	06-096 CMR 103(2)(B)(1)(a)

E. Emissions shall not exceed the following [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)
Emer. Gen. #1	0.38	0.38	0.30	10.73	0.88	0.18

F. Emergency Generator #1 is subject to PM, CO, and NO_x + VOC emission requirements set forth in 40 CFR 60, Subpart III. Compliance with these emission requirements shall be demonstrated by certification from the manufacturer that this engine class meets the appropriate Tier standards. [40 CFR 60, Subpart III]

- G. MRH shall operate and maintain Emergency Generator #1 in accordance with the manufacturer's written instructions. MRH shall not change settings that are not approved in writing by the manufacturer. [40 CFR 60.4211(a)]
- H. Visible emissions from the Emergency Generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

All references to "12-month rolling total" in Air Emission License A-493-71-H-R and in Amendment #1, A-493-71-I-M, shall be amended to read "calendar year".

DONE AND DATED IN AUGUSTA, MAINE THIS *1st* DAY OF *December*, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *James P. Bodley*
BETH NAGUSKA, ACTING COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-493-71-H-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 09/21/2010

Date of application acceptance: 10/13/2010

Date filed with the Board of Environmental Protection:

This Order prepared by N. Lynn Cornfield, Bureau of Air Quality.

