

**Maine Medical Center
Scarborough Campus
Cumberland County
Scarborough, Maine
A-934-71-B-M**

**Departmental
Findings of Fact and Order
Air Emission License**

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

Maine Medical Center – Scarborough Campus (MMC) of Scarborough, Maine was issued Air Emission License A-934-71-A-N on February 1st, 2006, permitting the operation of emission sources associated with their health services campus.

MMC has requested a minor revision to their license in order to reflect the following:

1. Boilers ASC-1 and ASC-2 were previously listed as having a maximum heat input of 2.7 MMBtu/hr. The actual heat input for these boilers should be 3.17 MMBtu/hr.
2. Generators ASC-1 and MMCRI-1 license emission limits were originally calculated using AP-42 data. MMC would like to use provided manufacturer data to calculate license emission limits.
3. Generators ASC-1 and MMCRI-1 are currently limited to 475 hours of operation on a 12 month rolling total to keep emissions below the Chapter 137 reporting thresholds. The more stringent manufacturer emission factors will now allow for more operating hours while keeping below Chapter 137 reporting thresholds. Therefore, MMC requests to increase the operating limits of each of the generators from 475 hours to 500 hours on a 12 month rolling total.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (ft³/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Installation Date</u>	<u>Stack #</u>
Boiler ASC-1	3.17	3,108	Natural gas	2006/2007	1
Boiler ASC-2	3.17	3,108	Natural gas	2006/2007	1

Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Generator ASC-1	600	6.4	46.7	Diesel, 0.05%
Generator MMCRI-1	250	2.7	19.7	Diesel, 0.05%

C. Application Classification

The emissions for Boilers ASC-1 and ASC-2, and the generators will increase with the heat input correction and the increase in operating hours respectively. However, the application of corrected generator emission factors will result in a net decrease in total facility licensed emissions. Therefore, this application 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 Chapter 100 of the Department regulations. 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 Chapter 100 of the Department's regulations. 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. Boilers ASC-1 and ASC-2

The boilers were installed in 2006/2007 and are rated at 3.17 MMBtu/hr. They are therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989. The BACT analysis outlined in License A-934-71-A-N shall be considered BACT for Boilers ASC-1 and ASC-2.

C. Emergency Generator ASC-1

Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

MMC is licensed to install one new generator that is designated ASC-1. MMC has not yet selected a specific generator to fill this role but have narrowed their selection to three possible models from three different manufacturers. The emissions for this generator shall be generalized to represent the worst possible emission scenario for each pollutant among the three generator possibilities.

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

1. Chapter 106 regulates fuel sulfur content. However the use of diesel fuel with a maximum sulfur content not to exceed 0.05% by weight is more stringent and shall be considered BACT.
2. Emergency Generator ASC-1 shall be limited to 500 hr/yr of operation based on a 12 month rolling total. An hour meter shall be operated and a written log shall be kept for compliance purposes.
3. Chapter 103 regulates PM emission limits. The PM₁₀ limits are derived from the PM limits.
4. NO_x, CO, and VOC emission limits are based upon data provided by the manufacturers.
5. Visible emissions from Emergency Generator ASC-1 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. Emergency Generator MMCRI-1

Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

MMC operates an existing emergency generator designated MMCRI-1. A summary of the BPT analysis for Emergency Generator MMCRI-1 is the following:

1. Chapter 106 regulates fuel sulfur content. However the use of diesel fuel with a maximum sulfur content not to exceed 0.05% by weight is more stringent and shall be considered BPT.
2. Emergency Generator MMCRI-1 shall be limited to 500 hr/yr of operation based on a 12 month rolling total. An hour meter shall be operated and a written log shall be kept for compliance purposes.
3. MMC has provided PM emission limits from the generator manufacturer which shall be considered BPT. The PM₁₀ limits are derived from the PM limits.
4. NO_x, CO, and VOC emission limits are based upon data provided by the manufacturer.
5. Visible emissions from Emergency Generator MMCRI-1 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.

E. Annual Emissions

MMC shall be restricted to the following annual emissions, based on a 12 month rolling total:

Total Licensed Annual Emission for the Facility
Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers ASC-1 & 2	1.39	1.39	0.02	2.73	2.29	0.15
Boilers ASC-3 & 4	1.39	1.39	0.02	2.73	2.29	0.15
Hot Water Heaters ASC-1 & 2	0.12	0.12	0.01	1.58	1.33	0.09
Boilers MMCRI-1 & 2	1.32	1.32	0.02	2.58	2.17	0.15
Boiler MMCRI-3	0.88	0.88	0.02	1.72	1.45	0.10
Boiler 98-1	0.07	0.07	0.01	0.91	0.76	0.05
Boiler 98-2	0.75	0.75	0.01	1.46	1.23	0.09
Boiler 96-1, 2, 3 & 4	0.16	0.16	0.02	2.07	1.74	0.12
Generator ASC-1	0.19	0.19	0.08	3.83	1.53	0.10
Generator MMCRI-1	0.06	0.06	0.03	0.62	0.05	0.02
Total TPY	6.33	6.33	0.24	20.23	14.84	1.02

* Changes are depicted in **Bold**

III.AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

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-934-71-B-M subject to 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 Conditions 16 and 17 in Air Emission License A-934-71-A-N

(16) Boilers and Hot Water Heaters

- A. Boilers and hot water heaters at MMC’s Scarborough Campus shall fire natural gas fuel. Compliance shall be demonstrated by fuel purchase records. [MEDEP Chapter 115, BACT]
- B. Emissions shall not exceed the following: [MEDEP Chapter 115, BACT]

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler ASC-1	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler ASC-2	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler ASC-3	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler ASC-4	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler MMCRI-1	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler MMCRI-2	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler MMCRI-3	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)
Boiler 98-2	PM	0.05	MEDEP, Chapter 103, Section 2(B)(1)(a)

C. Emissions shall not exceed the following* [MEDEP Chapter 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)
Boiler ASC-1	0.16	0.16	0.01	0.32	0.26	0.02
Boiler ASC-2	0.16	0.16	0.01	0.32	0.26	0.02
Boiler ASC-3	0.16	0.16	0.01	0.32	0.26	0.02
Boiler ASC-4	0.16	0.16	0.01	0.32	0.26	0.02
Hot Water Heater ASC-1	0.02	0.02	0.01	0.18	0.16	0.01
Hot Water Heater ASC-2	0.02	0.02	0.01	0.18	0.16	0.01
Boiler MMCRI-1	0.15	0.15	0.02	2.58	2.17	0.15
Boiler MMCRI-2	0.15	0.15	0.02	2.58	2.17	0.15
Boiler MMCRI-3	0.2	0.2	0.01	0.40	0.33	0.03
Boiler 98-1	0.02	0.02	0.01	0.201	0.18	0.02
Boiler 98-2	0.17	0.17	0.01	0.34	0.28	0.02
Boilers 96-1, 2, 3 & 4 (emission limits for each boiler)	0.01	0.01	0.01	0.12	0.10	0.01

*Emission limits have been rounded up to the nearest hundredth.

D. Visible emissions from each boiler (Stacks #1 - #6) shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 3-hour period. [MEDEP Chapter 101]

(17) **Emergency Generators ASC-1 and MMCRI-1**

- A. MMC shall limit each emergency generator to **500 hours/year** of operation (based on a 12-month rolling total). An hour meter shall be maintained and operated on each emergency generator for compliance purposes. [MEDEP Chapter 115, BACT]
- B. The emergency generators shall be operated for emergency purposes only, or for short periods to exercise the units and keep them in operating order. A log shall be maintained and updated each time the generators run, documenting the date, time, and reason for their operation. [MEDEP Chapter 115, BACT]
- C. Generators ASC-1 and MMCRI-1 shall fire diesel fuel with a sulfur content not to exceed 0.05% by weight. Compliance shall be based on fuel receipts and records from the supplier documenting the quantity of fuel delivered and the sulfur content. Documentation of percent sulfur analyses performed on the supplier's bulk storage tanks may be used to demonstrate compliance. [MEDEP Chapter 115, BACT]

D. Emissions shall not exceed the following: [MEDEP Chapter 115]

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator ASC-1	PM	0.12	MEDEP, Chapter 103, Section 2(B)(1)(a), BACT

E. Emissions shall not exceed the following [MEDEP Chapter 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)
Generator ASC-1	0.77	0.77	0.32	15.32	6.10	0.39
Generator MMCRI-1	0.24	0.24	0.14	2.48	0.21	0.08

F. Visible emissions from the Emergency Generators shall each not exceed 20% opacity on a 6-minute block average, except for no more than two (2), six (6) minute block averages in a continuous 3-hour period. [MEDEP Chapter 101]

DONE AND DATED IN AUGUSTA, MAINE THIS _____ DAY OF _____ 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-934-71-A-N.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 7/6/2006

Date of application acceptance: 8/9/2006

Date filed with the Board of Environmental Protection: _____

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