

**Mercy Hospital  
d/b/a Mercy Hospital – Fore River  
Cumberland County  
Portland, Maine  
A-982-71-A-N (SM)**

**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., § 344 and § 590, the Department finds the following facts:

**I. REGISTRATION**

A. Introduction

Mercy Hospital of Portland, Maine has applied for an Air Emission License permitting the operation of emission sources associated with their Fore River Short Stay Hospital medical care facility.

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</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Boiler 1	16.3	116.6 gal/hr	#2 fuel oil. 0.5%S	1
		16,329 cf/hr	Natural Gas	
Boiler 2	16.3	116.6 gal/hr	#2 fuel oil. 0.5%S	1
		16,329 cf/hr	Natural Gas	

**Electrical Generation Equipment**

<u>Equipment</u>	<u>Firing Rate (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Horsepower (hp)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Gen 1	10.0	72.5	1502	Diesel Fuel, 0.05%	2

### C. Application Classification

The new source is considered a major source based on whether or not expected emissions exceed the “Significant Emission Levels” as defined in the Department’s regulations. The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 24, 2005). With the fuel limit on the emergency generator, the facility is licensed below the major source thresholds and is considered a synthetic minor.

## 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 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. Boiler #1 and Boiler #2

Boiler #1 and Boiler #2 are low emission Cleaver Brooks units manufactured in 2007, each having a heat input capacity of 16.3 MMBtu/hr capable of firing natural gas or #2 fuel oil. These boilers are subject to New Source Performance Standards (NSPS) Subpart Dc, which is applicable to boilers with a heat input of 10 MMBtu/hr or greater and manufactured after June 9, 1989.

BACT for Boiler #1 and Boiler #2 is the following:

1. PM, PM<sub>10</sub>, NO<sub>x</sub>, CO and VOC natural gas and #2 fuel oil emission limits are based on manufacturer data.
2. The SO<sub>2</sub> fuel oil emission limits are based on the firing of fuel oil which meets the criteria in ASTM D396 for #2 fuel oil and all of the sulfur in the fuel oil being converted to SO<sub>2</sub>.
3. SO<sub>2</sub> natural gas emission limits are based on an assumed natural gas sulfur content of 2,000 grains per million standard cubic feet.
4. When firing #2 fuel oil, visible emissions from the common stack serving Boiler #1 and Boiler #2 (Stack 1) shall not exceed 20% opacity recorded as six (6) minute block averages, except for no more than three (3) six-minute block averages in a 3-hour period.

5. When firing natural gas, visible emissions from the common stack serving Boiler #1 and Boiler #2 (Stack 1) shall not exceed 10% opacity recorded as six (6) minute block averages, except for no more than three (3) six-minute block averages in a 3-hour period.

**C. Gen 1**

Mercy Hospital will operate Gen 1 as a back-up diesel generator. Gen 1 is only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Gen 1 shall not to be used for prime power when reliable offsite power is available.

A summary of the BACT analysis for Gen 1 (1000 kW) is the following:

1. Use of an EPA Tier II Certified diesel engine.
2. Hour operational limit of 500 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
3. 06-096 CMR 106 regulates fuel sulfur content, however in this case a BPT/BACT analysis for SO<sub>2</sub> determined a more stringent limit of 0.05% was appropriate and shall be used.
4. PM, PM<sub>10</sub>, NO<sub>x</sub>, CO and VOC emission limits are based on manufacturer data.
5. Visible emissions from the back-up 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.

**G. Annual Emissions**

PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> and CO annual emissions from Mercy Hospital are based on combusting 1,000,000 gallons of #2 fuel oil meeting the requirements of ASTM D396 in the boilers and operating Gen 1 for 500 hours/year, firing 0.05% sulfur diesel fuel.

Due to a higher emission factor for VOC while firing natural gas, VOC annual emissions from Mercy Hospital are based on firing natural gas in the boilers 8,760 hours per year.

**Annual Emissions for the Facility  
(used to calculate the annual license fee)**

	PM Tons	PM <sub>10</sub> Tons	SO <sub>2</sub> Tons	NO <sub>x</sub> Tons	CO Tons	VOC Tons
Oil in Boilers	1.75	1.75	35.25	8.40	2.73	0.57
Gen 1	0.24	0.24	0.13	3.89	0.09	0.04
<b>Total Tons Per Year</b>	<b>2.0</b>	<b>2.0</b>	<b>35.4</b>	<b>12.3</b>	<b>2.8</b>	<b>0.6</b>

### **III.AMBIENT AIR QUALITY ANALYSIS**

According to 06-096 CMR 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-982-71-A-N 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.

#### **STANDARD CONDITIONS**

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive

- dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [06-096 CMR 115]
  - (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
  - (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
  - (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
  - (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
  - (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
  - (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
    - A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
      1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
      2. pursuant to any other requirement of this license to perform stack testing.
    - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
    - C. submit a written report to the Department within thirty (30) days from date of test completion.[06-096 CMR 115]

- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
  - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
  - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [06-096 CMR 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

**SPECIFIC CONDITIONS**

**(16) Boiler #1 and Boiler #2**

- A. Combined fuel oil use in Boiler #1 and Boiler #2 shall not exceed 1,000,000 gal/yr of fuel oil which meets the criteria in ASTM D396 for #2 fuel oil. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of fuel delivered. Records of annual fuel use shall be kept on a 12- month rolling total basis. [06-096 CMR 115, BACT]
- B. When firing #2 fuel oil, emissions from Boiler #1 and Boiler #2, each shall not exceed the following [MEDEP Chapter 115, BACT]:

<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>lb/hr</b>
PM	0.025	0.41
PM <sub>10</sub>	n/a	0.41
SO <sub>2</sub>	n/a	8.22
NO <sub>x</sub>	0.12	1.96
CO	n/a	0.64
VOC	n/a	0.03

- C. When firing natural gas, emissions Boiler #1 and Boiler #2, each shall not exceed the following [MEDEP Chapter 115, BACT]:

<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>lb/hr</b>
PM	0.01	0.16
PM <sub>10</sub>	n/a	0.16
SO <sub>2</sub>	n/a	0.16
NO <sub>x</sub>	n/a	0.57
CO	n/a	0.65
VOC	n/a	0.07

- D. When firing #2 fuel oil, visible emissions from the common stack serving Boiler #1 and Boiler #2 (Stack 1) shall not exceed 20% opacity recorded as six (6) minute block averages, except for no more than three (3) six (6) minute block averages in a 3-hour period. [06-096 CMR 115, BACT]
- E. When firing natural gas, visible emissions from the common stack serving Boiler #1 and Boiler #2 (Stack 1) shall not exceed 10% opacity recorded as six (6) minute block averages, except for no more than three (3) six- minute block averages in a 3-hour period. [06-096 CMR 115, BACT]

**(17) New Source Performance Standards for Boiler #1 and Boiler #2**

Boilers #1 and #2 are subject to Federal New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc and Mercy Hospital shall comply with the notification and record keeping requirements of 40 CFR Part 60.48c. These requirements include, but are not limited to, the following:

- A. Mercy Hospital shall submit notification to EPA and the Department of the date of construction, anticipated start-up, and actual start-up. This notification shall include the design heat input capacity of the boilers and the type of fuel to be combusted.
- B. Mercy Hospital shall perform and submit to EPA and the Department an initial performance test within 30 days after achieving the maximum production rate at which the facility will be operated but not later than 180 days after the initial start-up of the facility. The performance test shall consist of fuel supplier certification of the sulfur content of the fuel fired in Boilers #1 and #2. The fuel supplier certification must contain the name of the oil supplier and a statement from the oil supplier that the oil complies with ASTM D396 specifications for #2 fuel oil.
- C. Mercy Hospital shall record and maintain records of the amount of each fuel combusted during each calendar month.
- D. Mercy Hospital shall submit to EPA and the Department semi-annual reports. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each 6-month period.
- E. The following address for EPA shall be used for any reports or notifications required to be copied to them:

Compliance Clerk  
USEPA Region 1  
1 Congress Street  
Suite 1100  
Boston, MA 02114-2023

**(18) Gen 1**

- A. Gen 1 shall be limited to 500 hr/yr of operation (based on a 12 month rolling total). An hour meter shall be maintained and operated on Gen 1. [06-096 CMR 115, BACT]
- B. Gen 1 shall only to be operated for testing and maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Gen 1 shall not to be used for prime power when reliable offsite power is available. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BACT]
- C. Gen 1 shall fire diesel fuel with a sulfur content not to exceed 0.05% by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. [06-096 CMR 115, BACT]

