



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

**Eastern Maine Medical Center  
Penobscot County  
Bangor, Maine  
A-184-71-U-M**

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

**FINDINGS OF FACT**

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

A. Introduction

Eastern Maine Medical Center (EMMC) was issued Air Emission License A-184-71-R-R on March 9, 2016, for the operation of emission sources associated with their medical facility. The license was subsequently amended on December 13, 2023 (A-194-71-T-A) to replace Snowmelter #1 with an identical, like-kind unit.

The equipment addressed in this license amendment is located at 489 State Street, Bangor, Maine.

EMMC has requested a minor revision to their license in order to add oxygen trim combustion control to Boilers #4, #5, and #6, and adjust the SO<sub>2</sub> emission limits for Boilers #4, #5, #6, #7, #8, and the Combustion Turbine Generator to reflect the statutory sulfur content limits of distillate fuel. The visible emission limits for equipment whose current limit is based on *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101 will also be updated to reflect the recently updated rule.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

**Boilers**

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Date of Manuf.	Date of Install.	Stack #
Boiler #4	21.0	20,388 scf/hr	Natural Gas	1974	1974	1
		150 gal/hr	Distillate Fuel			
Boiler #5	21.0	20,388 scf/hr	Natural Gas	1974	1974	
		150 gal/hr	Distillate Fuel			
Boiler #6	21.0	20,388 scf/hr	Natural Gas	1985	1985	
		150 gal/hr	Distillate Fuel			
Boiler #7	12.25	12,247 scf/hr	Natural Gas	2015	2015	
		87.5 gal/hr	Distillate Fuel			
Boiler #8	12.25	12,247 scf/hr	Natural Gas	2015	2015	
		87.5 gal/hr	Distillate Fuel			

**Generators**

Equipment	Max. Input Capacity (MMBtu/hr)	Fuel Type	Firing Rate (gal/hr)	Date of Manuf.	Stack
Combustion Turbine Generator	64.4	Natural Gas	62,524 scf/hr	2006	Cogen
	63.5	Distillate Fuel	454 gal/hr		
Generator #1	14.6	Distillate Fuel	107 gal/hr	1998	EG1
Generator #2	14.6	Distillate Fuel	107 gal/hr	1998	EG2
Generator #3	19.3	Distillate Fuel	138 gal/hr	2015	EG3
Generator #4	4.88	Distillate Fuel	35.6 gal/hr	1991	EG4

**Snowmelting Equipment**

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Install.
Snowmelter #1	9.27	9,000	natural gas	2022
Snowmelter #2	9.27	9,000	natural gas	2008
Snowmelter #3	9.27	9,000	natural gas	2010
Snowmelter #4	9.27	9,000	natural gas	2010

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

This amendment will not increase licensed emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

E. Facility Classification

With the annual fuel limit on the Boilers, Snowmelters, and Combustion Turbine Generator, and the operating hours restriction on the emergency generators, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because EMMC is subject to license restrictions that keep facility emissions below major source thresholds for NO<sub>x</sub> and CO; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

**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 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

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 #4-#6

EMMC has elected to install and operate an oxygen trim burner control system on Boilers #4, #5, and #6. This addition will not change the emission rates of any regulated pollutant, but it does change the classification of the boiler under *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ.

1. National Emission Standards for Hazardous Air Pollutants (NESHAP):  
40 C.F.R. Part 63, Subpart JJJJJ

With the addition of oxygen trim to Boilers #4, #5, and #6, the boilers are reclassified to existing oil boilers with less frequent tune up requirements. This reclassification will decrease the required tune up frequency from every two years to every five years, and similarly the required compliance report schedule will be adjusted to match.

a. Boiler Tune-Up Program

Tune-ups shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

<b>Boiler Category</b>	<b>Tune-Up Frequency</b>
Boiler with oxygen trim system which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune up. <b>Boilers #4, #5, and #6</b>	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

b. Compliance Report

A compliance report shall be prepared by March 1<sup>st</sup> every five years which covers the previous five calendar years. The report shall be maintained by the source and submitted to the Department and/or to the EPA upon request. The report must include the items contained in §§ 63.11225(b)(1) and (2), including the following:  
[40 C.F.R. § 63.11225(b)]

- (1) Company name and address;
- (2) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (3) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- (4) The following certifications, as applicable:
  - (i) "This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."

- (ii) “No secondary materials that are solid waste were combusted in any affected unit.”
- (iii) “This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler’s time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer’s recommended procedures or procedures specified for a boiler of similar design if manufacturer’s recommended procedures are not available.”

**C. Fuel Sulfur Content Update**

Boilers #4, #5, #6, #7, #8, and the Combustion Turbine Generator are licensed to fire distillate fuel. With limited exceptions, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm) pursuant to 38 M.R.S. § 603-A(2)(A)(3). Therefore, the distillate fuel purchased or otherwise obtained for use in Boilers #4, #5, #6, #7, #8, and the Combustion Turbine Generator shall not exceed 0.0015% by weight (15 ppm). The calculations for the existing short term and annual emission rates of SO<sub>2</sub> were based on a fuel sulfur content of 0.05%. EMMC has requested that the emission rates for SO<sub>2</sub> be re-calculated using the lower fuel sulfur content that is required by statute.

**BPT Findings**

1. The SO<sub>2</sub> BPT emission limits for Boilers #4, #5, #6, #7, #8, and the Combustion Turbine Generator were based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight.
2. The SO<sub>2</sub> BPT emission limits for Boilers #4, #5, #6, #7, #8, and the Combustion Turbine Generator are the following:

<b>Unit</b>	<b>SO<sub>2</sub> (lb/hr)</b>
Boiler #4	0.04
Boiler #5	0.04
Boiler #6	0.04
Boiler #7	0.02
Boiler #8	0.02
Combustion Turbine Generator	0.10

D. Visible Emission Limits Update

In 2023, the Department completed rulemaking on revisions to *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101. The revised rule went into effect on January 1, 2024. The updated standards for Boilers #4-#8, Generators #1, #2, #3, and #4, the Combustion Turbine Generator, Snowmelters #1-#4, General Process Emissions, and Fugitive Emissions will be incorporated into this amendment.

1. Boilers #4-#8

During periods of time when only natural gas is being fired in Boilers #4, #5, #6, #7, and #8, visible emissions from Stack #1 shall not exceed 10% opacity on a six-minute block average basis.

During periods of time when distillate fuel is being fired in Boilers #4, #5, #6, #7, or #8, visible emissions from Stack #1 shall not exceed 20% opacity on a six-minute block average basis.

[06-096 C.M.R. ch. 101, (4)(D)]

2. Combustion Turbine Generator and Generators #1, #2, #3, and #4

Visible emissions from the Combustion Turbine Generator and Generator #3 shall each not exceed 20% opacity on a six-minute block average basis.

Visible emissions from Generators #1, #2, and #4 shall each not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time EMMC shall either meet the normal operating visible emissions standard or the following work practice standards and alternative visible emissions standard.

- a. The duration of the startup shall not exceed 30 minutes per event;
- b. Visible emissions shall not exceed 50% opacity on a six-minute block average basis; and
- c. EMMC shall keep records of the date, time, and duration of each startup.

Use of the work practice standards and alternative visible emissions standard in lieu of the normal operating standard is limited to no more than once per day.

Note: This does not limit the engine to one startup per day. It only limits the use of the alternative emission standard to once per day.

[06-096 C.M.R. ch. 101, (4)(A)(4)]

3. Snowmelters #1-#4

The visible emissions standards for Snowmelters #1-#4 will not be changed with this amendment, but the citation will be updated to reflect the newly revised ch. 101.

Visible emissions from Snowmelters #1-#4 shall each not exceed 10 percent opacity on a six (6) minute block average basis.  
[06-096 C.M.R. ch. 101, (3)]

4. General Process Emissions

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis.

5. Fugitive Emissions

EMMC shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

EMMC shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

E. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- Firing 200,000 MMBtu/year of fuel in the boilers, using worst case emission factors;
- A maximum of 1,339,551 gallons per year of distillate fuel fired in the Combustion Turbine Generator without SCR technology installed;
- Worst case emission factors for the Combustion Turbine Generator with both SCR and without SCR.
- Operating Generators #1, #2, #3, and #4 for 100 hrs/yr each; and
- Combined fuel use of 18 MMscf per year of Natural Gas on a 12-month rolling total basis in the Snow Melters.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Boilers #4-#8	3.00	3.00	3.00	0.15	25.00	15.00	2.50
Generator #1	0.09	0.09	0.09	0.01	2.70	0.62	0.07
Generator #2	0.09	0.09	0.09	0.01	2.70	0.62	0.07
Generator #3	0.12	0.12	0.12	0.01	2.10	0.17	0.05
Generator #4	0.03	0.03	0.03	0.01	0.78	0.21	0.02
Combustion Turbine Generator	17.08	17.08	17.08	0.88	45.61	32.85	9.64
Snowmelters	0.46	0.46	0.46	0.01	0.90	0.76	0.05
<b>Total TPY</b>	<b>20.9</b>	<b>20.9</b>	<b>20.9</b>	<b>1.1</b>	<b>79.8</b>	<b>50.3</b>	<b>12.4</b>

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

**III. AMBIENT AIR QUALITY ANALYSIS**

EMMC previously submitted an ambient air quality impact analysis outlined in air emission license A-184-71-M-A (dated May 10, 2005) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate Ambient Air Quality Standards (AAQS). An additional air quality impact analysis is not required for this license amendment.

**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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-184-71-U-M subject to the conditions found in Air Emission License A-184-71-R-R, in amendment A-184-71-T-A, and the following conditions.



Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment 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 Specific Condition (16)(A)(2) of Air Emission License A-184-71-R-R:

#### (16) Facility Fuel Requirements

##### A. Fuel Requirements

2. The facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm).  
[06-096 C.M.R. ch. 115, BPT]

The following shall replace Specific Conditions (17)(A)(2), (C), (E)(2)(a), and (E)(3) of Air Emission License A-184-71-R-R:

#### (17) Boilers

##### A. Distillate Fuel

2. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #4	0.63	0.63	0.63	0.04	5.25	1.47	0.53
Boiler #5	0.63	0.63	0.63	0.04	5.25	1.47	0.53
Boiler #6	0.63	0.63	0.63	0.04	5.25	1.47	0.53
Boiler #7	0.37	0.37	0.37	0.02	1.47	0.49	0.12
Boiler #8	0.37	0.37	0.37	0.02	1.47	0.49	0.12

##### C. Visible Emissions [06-096 C.M.R. ch. 101, (4)(D)]

1. During periods of time when only natural gas is being fired in Boilers #4, #5, #6, #7, and #8, visible emissions from Stack #1 shall not exceed 10% opacity on a six-minute block average basis.
2. During periods of time when distillate fuel is being fired in Boilers #4, #5, #6, #7, or #8, visible emissions from Stack #1 shall not exceed 20% opacity on a six-minute block average basis.

E. EMMC shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJ applicable to Boilers #4, #5, #6, #7, and #8 including, but not limited to, the following: [incorporated under 06-096 C.M.R. ch. 115, BPT]

2. The facility shall implement a boiler tune-up program. [40 C.F.R. § 63.11223]

a. Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

<b>Boiler Category</b>	<b>Tune-Up Frequency</b>
Boiler with oxygen trim system which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune up <b>Boilers #4, #5, #6, #7, and #8</b>	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

3. Compliance Report

A compliance report shall be prepared by March 1<sup>st</sup> every five years which covers the previous five calendar years. The report shall be maintained by the source and submitted to the Department and/or to the EPA upon request. The report must include the items contained in §§ 63.11225(b)(1) and (2), including the following: [40 C.F.R. § 63.11225(b)]

- a. Company name and address;
- b. A statement of whether the source has complied with all the relevant requirements of this Subpart;
- c. A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- d. The following certifications, as applicable:
  - (1) "This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
  - (2) "No secondary materials that are solid waste were combusted in any affected unit."

- (3) “This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler’s time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer’s recommended procedures or procedures specified for a boiler of similar design if manufacturer’s recommended procedures are not available.”

**The following shall replace Specific Condition (18)(H) of Air Emission License A-184-71-R-R:**

**(18) Generators #1, #2, and #4**

H. Visible Emissions

Visible emissions from Generators #1, #2, and #4 shall each not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time EMMC shall either meet the normal operating visible emissions standard or the following work practice standards and alternative visible emissions standard.

1. The duration of the startup shall not exceed 30 minutes per event;
2. Visible emissions shall not exceed 50% opacity on a six-minute block average basis; and
3. EMMC shall keep records of the date, time, and duration of each startup.

Use of the work practice standards and alternative visible emissions standard in lieu of the normal operating standard is limited to no more than once per day.

Note: This does not limit the engine to one startup per day. It only limits the use of the alternative emission standard to once per day.

[06-096 C.M.R. ch. 101, § 4(A)(4)]

**The following shall replace Specific Condition (19)(D) of Air Emission License A-184-71-R-R:**

**(19) Generator #3**

D. Visible Emissions

Visible emissions from Generator #3 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(4)]

The following shall replace Specific Condition (20)(E) and (H) of Air Emission License A-184-71-R-R:

(20) **Combustion Turbine Generator**

E. When firing distillate fuel, emissions from the Combustion Turbine Generator shall not exceed the following [06-096 C.M.R. 115, BPT]:

Emission Unit	Pollutant	lb/MMBtu
Combustion Turbine Generator	PM	0.06

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Combustion Turbine Generator	3.9	3.9	3.9	0.10	18.4	7.5	2.2

H. Visible emissions from the Combustion Turbine Generator shall not exceed 20% opacity on a six-minute block average basis.

The following shall replace Specific Condition (21)(E) of Air Emission License A-184-71-T-A:

(21) **Snowmelters #1-#4**

E. Visible emissions from Snowmelters #1-#4 shall each not exceed 10 percent opacity on a six (6) minute block average basis.  
[06-096 C.M.R. ch. 101, (3)]

The following are new conditions of Air Emission License A-184-71-R-R:

(24) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(B)(4)]

(25) **Fugitive Emissions**

1. EMMC shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

2. EMMC shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22. [06-096 C.M.R. ch. 101, § 4(C)]
- (26) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, EMMC may be required to submit additional information. Upon written request from the Department, EMMC shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter. [06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 23<sup>rd</sup> DAY OF APRIL, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for  
MELANIE LOYZIM, COMMISSIONER

**The term of this license amendment shall be ten (10) years from the issuance of Air Emission License A-184-71-R-R (issued 03/9/2016).**

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/6/24  
Date of application acceptance: 2/13/24

Date filed with the Board of Environmental Protection:

This Order prepared by Chris Ham, Bureau of Air Quality.

