



DEPARTMENT ORDER

**Maine Medical Center
 (Linen Processing Facility)
 Cumberland County
 Westbrook, Maine
 A-945-71-C-R**

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

FINDINGS OF FACT

After review of the air emission license renewal 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

Maine Medical Center has applied to renew their Air Emission License for the operation of emission sources associated with their Linen Processing facility.

The equipment addressed in this license is located at 53 Scott Drive in Westbrook, Maine.

B. Emission Equipment

The following equipment is addressed in this Air Emission License:

Boilers

<u>Equipment</u>	<u>Max. Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>	<u>Date of Install.</u>	<u>Stack #</u>
Boiler 1	6.1	5945 scfh*	Natural Gas	2006	2006	1

* - Based on a Natural Gas Heat Content of 1030 Btu/scf

Process Equipment

<u>Equipment</u>	<u>Production Rate</u>	<u>Maximum Firing Rate and Fuel</u>	<u>Pollution Control Equipment</u>	<u>Stack #</u>
Dryer #1	550 lb/hr of linens	1.4 MMBtu/hr of Natural Gas	Lint Screen, Exhaust Recirc.	3
Dryer #2	550 lb/hr of linens	1.4 MMBtu/hr of Natural Gas	Lint Screen, Exhaust Recirc.	4
Dryer #3	550 lb/hr of linens	1.4 MMBtu/hr of Natural Gas	Lint Screen, Exhaust Recirc.	5
Dryer #4	550 lb/hr of linens	1.4 MMBtu/hr of Natural Gas	Lint Screen, Exhaust Recirc.	6
Dryer #5	550 lb/hr of linens	1.4 MMBtu/hr of Natural Gas	Lint Screen, Exhaust Recirc.	7

C. Application Classification

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

The application for Maine Medical Center does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

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. Boiler #1

Boiler #1 is a fire tube boiler manufactured by Cleaver Brooks, that is used to provide heat for the Linen Processing facility. It was installed in 2006, fires natural gas and has a maximum heat input capacity of 6.1 MMBtu per hour. It exhausts through its own stack which exhausts 43 feet above ground level.

Boiler #1 includes a "Low Emissions Option" which utilizes induced flue gas recirculation with an integral front head that routes the flue gases from the fourth pass to the burner assembly for the purposes of reducing NO_x emissions.

1. BPT Findings

The BPT emission limits for Boiler #1 were based on the following:

Natural Gas

- PM/PM₁₀ – 0.05 lb/MMBtu, based on 06-096 C.M.R. ch. 115, BPT
- SO₂ – 0.6 lb/MMscf, based on AP-42 Table 1.4-2 dated 7/98
- NO_x – 100 lb/MMscf, based on AP-42 Table 1.4-1 dated 7/98
- CO – 84 lb/MMscf, based on AP-42 Table 1.4-1 dated 7/98
- VOC – 5.5 lb/MMscf, based on AP-42 Table 1.4-2 dated 7/98
- Visible Emissions – 06-096 C.M.R. ch. 115, BPT

Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Boiler #1	PM	0.05	06-096 C.M.R. ch. 115, BPT

The BPT emission limits for Boiler #1 are the following:

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler #1 6.1 MMBtu/hr Natural Gas	0.31	0.31	0.01	0.59	0.50	0.03

Visible emissions from Boiler #1 shall not exceed 10% opacity on a six-minute block average basis.

2. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Because of its size, Boiler #1 is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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

Because it fires natural gas, Boiler #1 is not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ. [40 C.F.R. §§ 63.11193 and 63.11195]

C. Process Equipment

Linens laundered at this facility are dried by five drying tumblers (dryers) that fire natural gas. Each dryer utilizes a burner that has a rated heat input capacity of 1.4 MMBtu/hr. The dryers' processing capacity is 220 lb per load per dryer, and each dryer is capable of processing 2.5 loads per hour. The dryers all exhaust through their own individual stacks.

To minimize particulate emissions, each dryer is equipped with a built-in lint screen. The lint screens are mesh 41, having a mesh width of 0.40 millimeters and are estimated to have a capture efficiency of approximately 78%. Additionally, roughly 60% of the dryer exhaust downstream of the lint screen is recirculated back through the burners which combusts materials that were not captured by the lint screens. In total, the lint screens and the recirculation process combine to produce an overall particulate control efficiency of approximately 90%. However, the actual emission rate is dependent on several factors, including but not limited to the age and quality of the linens being laundered, the condition of the lint screens and the amount of exhaust leakage. Maine Medical Center shall properly operate and maintain the dryers and their related equipment in accordance with the manufacturer's recommendations.

The BPT emission limits for the linen dryers were based on the following:

Natural Gas

PM/PM ₁₀	– 0.20 lb/hr, includes combustion emissions and process exhaust emissions combined; A-945-71-B-R, dated 12/18/11, BPT
SO ₂	– 0.60 lb/MMscf, based on AP-42 Table 1.4-2 dated 7/98
NO _x	– 100 lb/MMscf, based on AP-42 Table 1.4-1 dated 7/98
CO	– 84 lb/MMscf, based on AP-42 Table 1.4-1 dated 7/98
VOC	– 5.5 lb/MMscf, based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	– 06-096 C.M.R. ch. 115, BPT

The BPT emission limits for each of the five dryers are the following:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Dryers (1 through 5) 1.4 MMBtu/hr Natural Gas	0.20	0.20	0.01	0.13	0.11	0.01

Visible emissions from the dryers shall not exceed 10% opacity on a six-minute block average basis.

D. Annual Emissions

1. Total Annual Emissions

Maine Medical Center shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on all of the licensed equipment firing natural gas 8,760 hours per year.

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boiler #1	1.34	1.34	0.02	2.60	2.19	0.14
Dryer #1	0.88	0.88	0.01	0.58	0.49	0.03
Dryer #2	0.88	0.88	0.01	0.58	0.49	0.03
Dryer #3	0.88	0.88	0.01	0.58	0.49	0.03
Dryer #4	0.88	0.88	0.01	0.58	0.49	0.03
Dryer #5	0.88	0.88	0.01	0.58	0.49	0.03
Total TPY	5.7	5.7	0.1	5.5	4.6	0.3

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through ‘Tailoring’ revisions made to EPA’s *Approval and Promulgation of Implementation Plans*, 40 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100, are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

The quantity of CO₂e emissions from this facility is less than 100,000 tons per year, based on the following:

- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting*, 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. Part 98.

No additional licensing actions to address GHG emissions are required at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM ₁₀	25
SO ₂	50
NO _x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

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 A-945-71-C-R subject to the following conditions.

Severability: The invalidity or unenforceability of any provision of this License or part thereof 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. § 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. 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 C.F.R. 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 C.M.R. ch. 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 C.F.R. 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 C.M.R. ch. 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 C.M.R. ch. 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 emissions 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 C.M.R. ch. 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 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(16) Boiler #1

A. Fuel

Maine Medical Center shall utilize natural gas in Boiler #1 and shall operate and maintain the boiler in accordance with the manufacturer's recommendations. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Boiler #1	PM	0.05	06-096 C.M.R. ch. 115, BPT

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

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler #1	0.31	0.31	0.01	0.59	0.50	0.03

D. Visible emissions from Boiler #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(17) Dryers, 1 through 5

A. Maine Medical Center shall utilize natural gas in the dryers and shall operate and maintain the dryers and their related equipment in accordance with the manufacturer's recommendations. Related equipment includes but is not limited to the lint screens and the exhaust recirculation systems for each dryer. [06-096 C.M.R. ch. 115, BPT]

B. Emissions from each of the dryers shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Dryer #1	0.20	0.20	0.01	0.13	0.11	0.01
Dryer #2	0.20	0.20	0.01	0.13	0.11	0.01
Dryer #3	0.20	0.20	0.01	0.13	0.11	0.01
Dryer #4	0.20	0.20	0.01	0.13	0.11	0.01
Dryer #5	0.20	0.20	0.01	0.13	0.11	0.01

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C. Visible emissions from each of the dryers shall not exceed 10% opacity on a six-minute block average. [06-096 C.M.R. ch. 115, BPT]

(18) Maine Medical Center 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. § 605).

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF March, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Core for
PAUL MERCER, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[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: September 28, 2016

Date of application acceptance: October 4, 2016

Date filed with the Board of Environmental Protection:

This Order prepared by Patric J. Sherman, Bureau of Air Quality.

