



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

DARRYL N. BROWN
COMMISSIONER

Maine Department of Transportation
Kennebec County
Augusta, Maine
A-933-71-B-R/A

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

1. Maine Department of Transportation (Maine DOT) has applied to renew their Air Emission License permitting the operation of emission sources associated with their fleet services complex.
2. The equipment addressed in this license is located at 105 Capital Street, Augusta, Maine.
3. Maine DOT has requested a burner rating change for Boiler 2, and removal of the compressor and sand blasting operation from the license.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Boiler 1	1.5	10.7	#2 fuel oil, 0.5%	2
Boiler 2	4.34	31.0	#2 fuel oil, 0.5%	1
Boiler 3	1.7	12.0	#2 fuel oil, 0.5%	3

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

Electrical Generation Equipment

<u>Equipment</u>	<u>Maximum Design Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Generator 1	2.0	14.2	Diesel, 0.0015%

Process Equipment

<u>Equipment</u>	<u>Pollution Control Equipment</u>
Paint Booth	Filters

Maine DOT previously operated a compressor which will no longer be licensed for use. In addition, sand blasting operations were previously licensed at the shed location and have since moved to a new building. Compressed air is supplied to the sand blasting operations by an electric air compressor. Particulate matter generated during the blasting process is exhausted to a dust collector with an efficiency of 99.9%. Air is filtered and circulated throughout the building, thus, there are no air emissions from the sand blasting process.

Maine DOT also has three tanks (Tanks 1, 2, and 3) which have a capacity of 10,000 gallons and store unleaded gasoline (Tanks 1 and 2) and diesel (Tank 3). As per 06-096 CMR 115 (as amended), VOC storage tanks (including petroleum storage tanks) 10,000 gallons or less are considered insignificant based on size.

C. Application Classification

The application for Maine DOT does not include the licensing of increased emissions. Therefore, the license is considered to be a renewal and minor revision of current licensed emission units and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended).

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 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. Facility Description

Maine DOT operates a fleet services complex in Augusta. The complex consists of a fleet services building and a sign shop. In the fleet services building maintenance and upkeep for DOT vehicles occurs. The sign shop is located in a separate building and produces finished road signs for the entire state of Maine. A diesel-fired generator is located on facility grounds for emergency situations.

C. Boilers

Boilers 1, 2 and 3 are operated for heating purposes and have maximum design capacities of 1.5, 4.34 and 1.7 MMBtu/hr respectively. Boiler 1 is an HB Smith Boiler, Boiler 2 was manufactured by Kewanee, and Boiler 3 is a York Power Boiler. Each of the boilers is rated under 10 MMBtu/hr and is therefore 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

Boilers 1, 2 and 3 are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The units are each rated under 10 MMBtu/hr and are thus not subject to PM, CO, or Mercury emission limits from 40 CFR Part 63 Subpart JJJJJ.

A summary of the BPT analysis for Boilers 1, 2 and 3 (1.5, 4.34, and 1.7 MMBtu/hr respectively) is the following:

1. The boilers shall fire #2 fuel oil.
2. The SO₂ emission limits are based on the firing of fuel which meets the criteria in ASTM D396 for #2 fuel oil.
3. The PM and PM₁₀ limits for units larger than 3 MMBtu/hr are derived from 06-096 CMR 103. The PM and PM₁₀ limits for smaller units are based upon BPT analysis from the previous license.
4. NO_x emission limits are based on data from similar #2 oil fired boilers of this size and age.

5. CO and VOC emission limits are based upon AP-42 data dated 9/98.
6. Visible emissions from each of the 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.
7. Pursuant to 40 CFR Part 63 Subpart JJJJJ, Maine DOT shall implement a boiler tune-up program.

D. Generator 1

Maine DOT operates one emergency diesel 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.

Generator 1 was ordered prior to July 11, 2005 and manufactured prior to April 1, 2006. Therefore, Generator 1 is not subject to New Source Performance Standards 40 CFR Part 60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.

Generator 1 is not subject to 40 CFR Part 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* because of the nature of Maine DOT operations. Subpart ZZZZ (63.6590(b)(3)) excludes residential, institutional, and commercial uses; general automotive repair facilities are defined as commercial use.

A summary of the BPT analysis for Generator 1 (2.0 MMBty/hr) is the following:

- A. Generator 1 shall fire only diesel fuel with a maximum sulfur content not to exceed 0.0015% by weight.
- B. Generator 1 shall be limited to 500 hr/yr of operation based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours.
- C. 06-096 CMR 106 regulates fuel sulfur content, however in this case a BPT analysis for SO₂ determined a more stringent limit of 0.0015% was appropriate and shall be used.

- D. The PM and PM₁₀ limits for units larger than 3 MMBtu/hr are derived from 06-096 CMR 103 (as amended). The PM and PM₁₀ limits for smaller units are based upon BPT analysis from a previous license.
- E. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
- F. Visible emissions from Generator 1 shall not exceed 30% 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. Paint Booth

The Paint Booth located in the operations building is utilized to paint large equipment, such as snow plows and other fleet services vehicle parts. The booth is completely enclosed and is equipped with an air ventilation system and filters. Paint is applied with a low pressure spray gun. In the previous license, Maine DOT was limited to a 2 tpy VOC limit and a 1.5 tpy total HAP limit for the paint booth. These limits will remain in effect.

F. Annual Emissions

Maine DOT shall be restricted to the following annual emissions, based on a calendar year:

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

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Total HAP
Boiler 1	0.53	0.53	3.31	1.97	0.05	0.01	--
Boiler 2	1.52	1.52	9.57	5.70	0.68	0.03	--
Boiler 3	0.60	0.60	3.75	2.23	0.27	0.01	--
Generator 1	0.06	0.06	0.03	2.21	0.48	0.18	--
Paint Booth	--	--	--	--	--	2.0	1.5
Total TPY	2.7	2.7	16.7	12.1	1.5	2.2	1.5

III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

<u>Pollutant</u>	<u>Tons/Year</u>
PM	25
PM ₁₀	25
SO ₂	50
NO _x	100
CO	250

Based on the total facility licensed emissions, Maine DOT 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-933-71-B-R/A 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-A. [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) Boilers

- A. Boilers 1, 2, and 3 shall fire #2 fuel oil. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of fuel delivered (ASTM D396 compliant). Records of annual fuel use shall be kept on a calendar year basis. [06-096 CMR 115, BPT]
- B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler 2	PM	0.08	06-096 CMR 103(2)(B)(1)(a)

- C. 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)
Boiler 1	0.12	0.12	0.76	0.45	0.05	0.01
Boiler 2	0.35	0.35	2.19	1.30	0.16	0.01
Boiler 3	0.14	0.14	0.86	0.51	0.06	0.01

- D. Visible emissions from Boilers 1, 2 and 3 shall each not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]
- E. Maine DOT shall implement a boiler tune-up program to include the tune-up of Boilers 1, 2 and 3 within one year of the date of publication of 40 CFR Part 63 Subpart JJJJJ in the federal register. [40 CFR Part 63.11196)(a)(1)]

- F. Maine DOT shall submit a Notification of Compliance status report no later than 120 days after conducting the initial boiler tune-up. [40 CFR Part 63.9(h)]
- G. The initial Notification of Compliance status report shall include:
1. The following certification of compliance signed by a responsible official, "This facility complies with the requirements in §63.11214 to conduct an initial tune-up of the boiler." [40 CFR Part 63.11225(a)(4)(i)]
 2. The methods used to determine compliance [40 CFR Part 63.9(h)(2)(i)(A)]
 3. Results of opacity/visible emission observations, and/or other monitoring procedures or methods that were conducted [40 CFR Part 63.9(h)(2)(i)(B)]
 4. Methods that will be used for determining continuing compliance [40 CFR Part 63.9(h)(2)(i)(C)]
 5. Type and quantity of HAPs emitted by Maine DOT [40 CFR Part 63.9(h)(2)(i)(D)]
 6. An analysis demonstrating that Maine DOT is an area source of HAPs [40 CFR Part 63.9(h)(2)(i)(E)]
 7. A description of air pollution control equipment for each emission point, including each control device for each hazardous air pollutant and the control efficiency for each control device [40 CFR Part 63.9(h)(2)(i)(F)]
- H. After the initial tune-up and initial compliance report has been submitted, Maine DOT shall implement a biennial boiler tune-up program and submit biennial compliance reports. The following are requirements of the boiler tune-up program:
1. Each biennial tune-up shall be conducted no more than 25 months after the previous tune-up. [40 CFR Part 63.11223(a)]
 2. Each biennial tune-up shall include the following, as applicable:
 - a. Inspection of the burner, cleaning/replacing any component of the burner, as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; however, the burner

must be inspected at least once every 36 months. [40 CFR Part 63.11223(b)(1)]

- b. Inspection of the flame pattern, and adjustment of the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
 - c. Inspection of the system controlling the air-to-fuel ratio, to ensure proper calibration and that it is functioning properly. [40 CFR Part 63.11223(b)(3)]
 - d. Optimization of total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 - e. Measurement of concentration in the effluent stream of CO in parts per million (ppm), by volume, and oxygen in volume percent, before and after adjustments are made. [40 CFR Part 63.11223(b)(5)]
3. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of start-up. [40 CFR Part 63.11223(b)(7)]
- I. A description of any deviations (if any) from the applicable requirements during the reporting period, the time periods which the deviations occurred, and the corrective actions taken.

(17) **Generator 1**

- A. Maine DOT shall limit Generator 1 to 500 hr/yr of operation (based on a calendar year). An hour meter shall be maintained and operated on Generator 1. [06-096 CMR 115, BPT]
- B. Generator 1 shall only be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Generator 1 shall not 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, BPT]
- C. Generator 1 shall fire diesel fuel with a sulfur limit not to exceed 0.0015% by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]
- D. 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)
Generator 1	0.24	0.24	0.10	8.82	1.90	0.70

- E. Visible emissions from Generator 1 shall not exceed 30% 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.

(18) Record Keeping

- A. Maine DOT shall maintain records consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)] :

1. Copies of compliance reports
2. Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.
3. Documentation of fuel type(s) used monthly by each boiler
4. The occurrence and duration of each malfunction of the boiler
5. Actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation.

(19) Paint Booth

- A. Maine DOT shall operate a low-pressure spray gun to apply paint. [06-096 CMR 115, BPT]
- B. The paint booth shall be equipped with operational ventilation and filtration systems. Maine DOT shall demonstrate good maintenance practices by maintaining a log of filter replacements. [06-096 CMR 115, BPT]
- C. The Paint Booth shall not exceed 2.0 tons per year of VOC, on a calendar year total. Maine DOT shall keep monthly records of VOC emitted from the Paint Booth and shall calculate VOC emissions on a calendar year basis to ensure

compliance. These records shall include purchase receipts and MSDS sheets that show the amount of VOC contained in each type of coating.

- D. The Paint Booth shall not exceed 1.5 tons per year total HAP, on a calendar year basis. Maine DOT shall keep monthly records of HAP emitted from the Paint Booth and shall calculate HAP emissions on a calendar year basis to ensure compliance. These records shall include purchase receipts and MSDS sheets that show the amount of HAP contained in each type of coating.
- E. Opacity from the Paint Booth shall not exceed 10% on a six (6) minute block average basis. [06-096 CMR 101, BPT]

(20) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour. [06-096 CMR 101]

(21) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

- (22) Maine DOT shall submit an application for an amendment prior to running Generator 1 as a dispatchable load generators. [06-096 CMR 115]

- (23) Maine DOT 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.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 28th DAY OF March, 2011.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brown
DARRYL N. BROWN, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 11/5/2010

Date of application acceptance: 12/7/2010

Date filed with the Board of Environmental Protection:

This Order prepared by Amanda L. Gray, Bureau of Air Quality.



