



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**Millinocket Regional Hospital
Penobscot County
Millinocket, Maine
A-493-71-K-R/A**

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

FINDINGS OF FACT

After review of the air emissions license renewal 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 Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Millinocket Regional Hospital (MRH) has applied to renew their Air Emission License permitting the operation of emission sources associated with their healthcare facility.

MRH has requested an amendment to their license in order to include the operation of a new biomass pellet boiler, LPB-4.

The equipment addressed in this license is located at 200 Somerset Street, Millinocket, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type, % sulfur</u>	<u>Mfg. Date</u>	<u>Install. Date</u>	<u>Stack #</u>
LPB-1	4.5 MMBtu/hr	32.1 gal/hr	#2 Fuel oil, 0.5%	2010	2011	1
LPB-2	4.5 MMBtu/hr	32.1 gal/hr	#2 Fuel oil, 0.5%	2003	2004	1
LPB-3	4.5 MMBtu/hr	32.1 gal/hr	#2 Fuel oil, 0.5%	2003	2004	1
LPB-4 *	2.39 MMBtu/hr	300 lb/hr	Biomass pellet	2012	2012	B-1
LB-100 **	100 kW	-	Electric powered	-	-	N/A
LB-180 **	180 kW	-	Electric powered	-	-	N/A

* Denotes new equipment

** Electrically powered steamed boilers, included for inventory purposes only

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

Generators

<u>Equipment</u>	<u>Horse Power (HP)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Mfg. Date</u>	<u>Install. Date</u>	<u>Stack #</u>
EG-1	835	42.7	Diesel, 0.0015%	2010	2011	G-1

C. Application Classification

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. The emission increases are determined by subtracting the current licensed emissions (from license A-493-71-J-A dated December 1, 2010) preceding the modification from the maximum future licensed allowed emissions (as discussed in this license A-493-71-K-R/A), as follows:

<u>Pollutant</u>	<u>Current License Pre Modification (TPY)</u>	<u>Future License Post Modification (TPY)</u>	<u>Net Change (TPY)</u>	<u>Sig. Level</u>
PM	1.5	4.3	2.8	100
PM ₁₀	1.5	4.3	2.8	100
SO ₂	6.0	6.9	0.9	100
NO _x	17.4	9.2	-8.2	100
CO	1.7	8.0	6.3	100
VOC	0.3	0.3	0.0	50

This modification is determined to be a renewal and a minor modification 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 *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 new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). 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 LPB-1, LPB-2 and LPB-3

MRH operates LPB-1, LPB-2 and LPB-3 primarily for facility heating and hot water. The boilers are each rated at 4.5 MMBtu/hr and fire #2 fuel oil. LPB-1, LPB-2 and LPB-3 were installed in 2011, 2004 and 2004, respectively, and all three exhaust through a common stack, designated Stack #1.

Due to their size, the boilers are 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.

1. BPT Findings

The BPT emission limits for the boilers were based on the following:

- PM/PM₁₀ – 0.12 lb/MMBtu based on 06-096 CMR 103
- SO₂ – Based on firing ASTM D396 compliant #2 fuel oil (0.5% sulfur); 0.5 lb/MMBtu
- NO_x – 20 lb/1000 gal, AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal, AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal, AP-42, Table 1.3-3, dated 5/10
- Opacity – Visible emissions from the common stack serving LPB-1, LPB-2 and LPB-3 (Stack #1) shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

The BPT emission limits for the boilers are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
LPB-1	0.54	0.54	2.25	0.64	0.16	0.01
LPB-2	0.54	0.54	2.25	0.64	0.16	0.01
LPB-3	0.54	0.54	2.25	0.64	0.16	0.01

MRH shall be limited to a combined total of 190,000 gallons/yr of #2 fuel oil for LPB-1, LPB-2 and LPB-3 based on a calendar year.

Prior to January 1, 2016, the #2 fuel oil fired in LPB-1, LPB-2 and LPB-3 shall be ASTM D396 compliant #2 fuel oil (maximum sulfur content of 0.5% by weight). Per 38 MRSA §603-A(2)(A)(3), beginning January 1, 2016, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm), and beginning January 1, 2018, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm).

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use both on a monthly and calendar year basis. Documentation shall include the quantity and type of fuel used and the sulfur content of the fuel.

C. Boiler LPB-4

MRH operates a new wood pellet fired boiler manufactured by Schmid with a maximum design heat input capacity of 2.39 MMBtu/hr. The new boiler (LPB-4) uses Pellet Fuels Institute Premium pellets which have standards of 8% moisture or less. LPB-4 provides heat and hot water to the medical facility. The boiler was manufactured in 2012 and exhausts through Stack B-1 at a height of 28 feet above local ground level.

According to the manufacturer, LPB-4 contains an air-cooled underfeed stoker grate that ensures optimized combustion by pushing the fuel up into the combustion chamber at a regulated rate. The durable triple-layered ceramic and steel combustion chamber includes flexible dilation joints that allow for expansion and contraction which extends the life of the furnace. Additional features such as automatic firetube cleaning, ash removal and the multi-cyclone enable lower particulate emissions and reduced maintenance costs. The boiler is also controlled by a five circuit lambda control system that monitors its performance and maintains efficiency.

Due to the size of LPB-4, the unit is 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.

1. BACT Findings

The BACT emission limits for the boiler were based on the following:

- PM/PM₁₀ – 0.25 lb/MMBtu based on units of similar size and age
- SO₂ – 0.025 lb/MMBtu, AP-42, Table 1.6-2, dated 9/03
- NO_x – 0.49 lb/MMBtu, AP-42, Table 1.6-2, dated 9/03
- CO – 0.60 lb/MMBtu, AP-42, Table 1.6-2, dated 9/03
- VOC – 0.017 lb/MMBtu, AP-42, Table 1.6-3, dated 9/03
- Opacity – Visible emissions from the boiler firing biomass shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

The BACT emission limits for the boiler are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
LPB-4	0.60	0.60	0.06	1.17	1.43	0.04

LPB-4 shall be limited to 1,300 tons/year of wood pellets at 8% moisture content with a heat content of 7,970 Btu/lb (or equivalent), on a calendar year basis.

2. Periodic Monitoring

Periodic monitoring for LPB-4 shall include recordkeeping to document fuel use both on a monthly and calendar year basis. Compliance may be based on either delivery records, including receipts of wood pellet deliveries and a record of deliveries each month to represent the fuel consumed for the month, or actual fuel metering data.

D. 40 CFR Part 63 Subpart JJJJJ

LPB-1 through 4 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). LPB-1 is considered a new oil boiler rated less than 5 MMBtu/hr, LPB-2 and LPB-3 are considered existing oil boilers rated less than 5 MMBtu/hr, and LPB-4 is considered a new biomass boiler rated less than 10 MMBtu/hr.

For informational purposes, a summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however MRH is

still subject to the requirements. Notification forms and additional rule information can be found on the following website:
<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

An Initial Notification submittal to EPA for LPB-2 and LPB-3 is due no later than January 20, 2014. LPB-1 and LPB-4 are new sources, therefore the Initial Notification submittal is due within 120 days after the source becomes subject to the standard. [40 CFR Part 63.11225(a)(2)]

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented upon startup for LPB-1 and LPB-4. LPB-1 and LPB-4 are new sources that only have applicable work practice standards or management practices and are therefore are not required to complete an initial performance tune-up or Notification of Initial Status. [40 CFR Part 11196(c) and 40 CFR Part 63.11210(f)]

(b) A boiler tune-up program shall be implemented to include the initial tune-up of LPB-2 and LPB-3 no later than March 21, 2014. [40 CFR Part 63.11196(a)(1)]

(c) The boiler tune-up program, conducted every five years for LPB-1, LPB-2, and LPB-3 and biannually for LPB-4, to demonstrate continuous compliance, shall be performed as specified below:

1. As applicable, inspect the burner, and clean or replace 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 for LPB-4 or once every 72 months for LPB-1, LPB-2, and LPB-3. [40 CFR Part 63.11223(b)(1) and 40 CFR Part 63.11223(e)]
2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the air-to-fuel control system inspection until the next scheduled shutdown is permitted; however, the inspection must occur at least once every 36 months for LPB-4

and once every 72 months for LPB-1, LPB-2, and LPB-3 [40 CFR Part 63.11223(b)(3) and 40 CFR Part 63.11223(e)]

4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
 6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]
- (d) After conducting the initial boiler tune-up required for LPB-2 and LPB-3, a Notification of Compliance Status shall be submitted to EPA no later than July 19, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]
- (e) 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 [40 CFR Part 63.11223(a) and Table 2]:

Boiler Category	Tune-Up Frequency
New or Existing Oil, Biomass and Coal fired boilers that are not designated as "Boilers with less frequent tune up requirements" listed below	Every 2 years
<i>New and Existing Oil, Biomass, and Coal fired Boilers with less frequent tune up requirements</i>	
Seasonal (see definition §63.11237)	Every 5 years
Limited use (see definition §63.11237)	Every 5 years
Oil Fired boiler with a heat input capacity of ≤ 5MMBtu/hr	Every 5 years
Boiler with oxygen trim system which maintains and optimum air-to-fuel ratio that would otherwise be subject to a biennial tune up	Every 5 years

1. Each five year tune-up for LPB-1, LPB-2 and LPB-3 shall be conducted no more than 61 months after the previous tune-up. Each biannual tune-up for LPB-4 shall be conducted no more than 25 months after the previous tune-up. [40 CFR Part 63.11223(b) and 40 CFR Part 63.11223(e)]

2. For new boilers LPB-1 and LPB-4 that are not required to submit an initial boiler tune-up, the first tune-up shall be no later than 61 months for LPB-1 and 25 months for LPB-4 after the initial startup of the respective boiler.
3. The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)]
The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of notifications and reports with supporting compliance documentation; 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; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

Note: EPA will require submission of Notification of Compliance Status reports for tune-ups and energy assessments through their electronic reporting system. However, the system will not be in place until October 2013, so sources may submit the written NOCS to the EPA Administrator. [63.1125(a)(4)(vi)]

E. Emergency Generator #1 (EG-1)

MRH operates one emergency generator, designated EG-1. The emergency generator is rated at 5.85 MMBtu/hr (835 HP output) and fires diesel fuel oil. EG-1 was manufactured in 2010 and installed in 2011.

1. BPT Findings

The BPT emission limits for the generator are based on the following:

- PM/PM₁₀ – 0.20 g/kW-hr based on 40 CFR §60.4205 and 06-096 CMR 115, BPT; 0.05 lb/MMBtu
- SO₂ – Based on firing 0.0015% sulfur diesel fuel, 0.0015 lb/MMBtu
- NO_x – 6.40 g/kW-hr based on 40 CFR §60.4205 and 06-096 CMR 115, BPT; 1.36 lb/MMBtu
- CO – 3.50 g/kW-hr based on 40 CFR §60.4205 and 06-096 CMR 115, BPT; 0.79 lb/MMBtu
- VOC – 0.090 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)
- Opacity – Visible emissions from the diesel generator shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

The BPT emission limits for the emergency generator are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
EG-1	0.26	0.26	0.01	7.94	4.63	0.53

EG-1 shall be limited to 500 hours of operation a year, based on a calendar year. MRH shall keep records of the hours of operation of the unit.

2. 40 CFR Part 60, Subpart IIII

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to EG-1 listed above since the unit was ordered after July 11, 2005 and manufactured after April 1, 2006.

Emergency Definition:

Emergency stationary ICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE 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 ICE used to pump water in the case of fire or flood, etc.

- (2) Paragraph (1) above notwithstanding, the emergency stationary ICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:
- (i) Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
 - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
 - (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except if the following conditions are met:
- (i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

- (ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
- (iv) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (v) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[40 CFR §60.4211(f) and §60.4219]

40 CFR Part 60, Subpart III Requirements:

The generator shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 CFR §60.4202. [40 CFR §60.4205(b)]

The diesel fuel fired in the generator shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 CFR §60.4207(b)]

A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §60.4209(a)]

The generator shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MRH that are approved by the engine manufacturer. MRH may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

The generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power

as part of a financial arrangement with another entity unless the conditions in §60.4211(f)(3)(i) are met). [40 CFR §60.4211(f)]

No initial notification is required for emergency engines. [40 CFR §60.4214(b)]

If EG-1 operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), the facility shall submit an annual report containing the information in §60.4214(d)(1)(i) through (vii). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §60.4214(d)]

3. 40 CFR Part 63, Subpart ZZZZ

By meeting the requirements of 40 CFR Part 60 Subpart IIII, EG-1 also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ. However, EG-1 is considered exempt from the requirements of Subpart ZZZZ since it is categorized as an institutional emergency engine and it does not operate or is not contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii). An institutional emergency engine is defined by this Subpart as follows:

an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes,

research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations. [40 CFR § 63.6675]

F. Annual Emissions

1. Total Annual Emissions

MRH shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits were calculated based on 190,000 gal/yr #2 fuel oil fired in LPB-1, LPB-2 and LPB-3, 1,300 tons/yr wood pellets with 8% moisture and 7,970 Btu/lb heat content (or equivalent) fired in LPB-4 and an operating time of 500 hrs/yr for the emergency generator:

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
LPB-1, LPB-2 & LPB-3	1.60	1.60	6.65	1.90	0.48	0.03
LPB-4	2.62	2.62	0.26	5.13	6.28	0.18
EG-1	0.07	0.07	0.01	1.99	1.16	0.13
Total TPY	4.3	4.3	6.9	9.0	7.9	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 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), 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).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, MRH is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

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

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

The total facility licensed emissions 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-493-71-K-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 LPB-1, LPB-2 and LPB-3**

A. Fuel

1. Combined total fuel use for LPB-1, LPB-2 and LPB-3 shall not exceed 190,000 gal/yr of #2 fuel oil, based on a calendar year.
2. Prior to January 1, 2016, the #2 fuel oil fired in the boilers shall be ASTM D396 compliant (max. sulfur content of 0.5% by weight). [06-096 CMR 115, BPT]
3. Beginning January 1, 2016, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
4. Beginning January 1, 2018, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
5. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered. Records of annual fuel use shall be kept on a monthly and calendar year basis. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
LPB-1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
LPB-2	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
LPB-3	PM	0.12	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)
LPB-1	0.54	0.54	2.25	0.64	0.16	0.01
LPB-2	0.54	0.54	2.25	0.64	0.16	0.01
LPB-3	0.54	0.54	2.25	0.64	0.16	0.01

D. Visible emissions from the common stack serving LPB-1, LPB-2 and LPB-3 (Stack #1) shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

(17) **Boiler LPB-4**

A. Fuel

- LPB-4 shall be limited to 1,300 tons/year of wood pellets at 8% moisture content with a heat content of 7,970 Btu/lb (or equivalent), on a calendar year basis. [06-096 CMR 115, BACT]
- Compliance may be based on either delivery records, including receipts of wood pellet deliveries and a tally of deliveries each month to represent the fuel consumed for the month, or actual fuel metering data. Records of annual fuel use shall be kept on a monthly and calendar year basis. [06-096 CMR 115, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
LPB-4	PM	0.25	06-096 CMR 115, BACT

C. Emissions shall not exceed the following [06-096 CMR 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)
LPB-4	0.60	0.60	0.06	1.17	1.43	0.04

- D. Visible Emissions from LPB-4 shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than two (2) six (6) minute block averages in a 3-hour period. [06-096 CMR 115, BACT]
- E. Ash from LPB-4 shall be disposed of in accordance with the Bureau of Remediation and Waste Management (BRWM). Ash shall be sufficiently conditioned with water or transported in covered containers so as to prevent fugitive emissions. [06-096 CMR 115, BPT]

(18) **Emergency Generator #1 (EG-1)**

- A. EG-1 is limited to 500 hours per year total operation, based on a calendar year. Compliance shall be demonstrated by a written log of all the generator operating hours. [06-096 CMR 115]
- B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
EG-1	PM	0.05	40 CFR Part 60, Subpart IIII [40 CFR §60.4205(b)]

- 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)
EG-1	0.26	0.26	0.01	7.94	4.63	0.53

- D. Visible emissions from EG-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. [06-096 CMR 101]
- E. EG-1 shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:
 - 1. The generator shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]
 - 2. The diesel fuel fired in the generator shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 CFR §60.4207(b) and 06-096 CMR 115]

3. A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §60.4209(a)]
4. The generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §60.4211(f)(3)(i) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115]
5. The generator shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MRH that are approved by the engine manufacturer. MRH may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]
6. If EG-1 operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), the facility shall submit an annual report containing the information in §60.4214(d)(1)(i) through (vii). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §60.4214(d)]

Millinocket Regional Hospital
Penobscot County
Millinocket, Maine
A-493-71-K-R/A

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- (19) MRH 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 7 DAY OF March, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marie Allen Robert Cone for
PATRICIA W. AHO, COMMISSIONER

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

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/6/2011

Date of application acceptance: 4/13/2011

Date filed with the Board of Environmental Protection:

This Order prepared by Allison M. Hazard, Bureau of Air Quality.



