



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

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**Inland Hospital
Kennebec County
Waterville, Maine
A-110-71-K-M**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

FINDINGS OF FACT

After review of the air emissions license amendment 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

Inland Hospital was issued Air Emission License A-110-71-J-R on December 18, 2012, permitting the operation of emission sources associated with their healthcare facility.

Inland Hospital has requested a minor revision to their license in order to convert Boilers #1, #2 and #3 from #4 fuel oil to #2 fuel oil. In addition, all references of a 12 month rolling total for the basis for emissions, fuel caps and monitoring requirements will now be based on a calendar year.

The equipment addressed in this license is located at 200 Kennedy Memorial Drive in Waterville, Maine.

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	5.3	37.9	#2 fuel oil, 0.5% S	1
Boiler #2	5.3	37.9	#2 fuel oil, 0.5% S	1
Boiler #3	3.3	23.6	#2 fuel oil, 0.5% S	1

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1235 CENTRAL DRIVE, SKYWAY PARK
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C. Application Classification

This amendment will not result in any increased emissions of any pollutant. Therefore, this modification is determined to be a minor revision 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.

B. Amendment Description

Inland Hospital has requested an amendment to switch fuels being burned in the facility's boiler units. Boilers #1, #2 and #3 previously fired #4 fuel oil, but beginning March 2013, the boiler units have switched to #2 fuel oil.

In addition, all references of a 12 month rolling total for the basis of emissions, fuel limitations and compliance requirements in license A-110-71-J-R (dated December 18, 2012) shall be changed to being based on a calendar year.

C. Boilers #1, #2 and #3

Boilers #1, #2 and #3 have switched from firing #4 fuel oil to #2 fuel oil.

1. BACT Findings

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

PM/PM₁₀ – Emissions are regulated by 06-096 CMR 103, *Fuel Burning Equipment Particulate Emission Standard*, however, the BACT determined PM emission limit of 0.08 lb/MMBtu

when firing #2 fuel oil is more stringent and shall be considered BACT. [06-096 CMR 115, BACT]

SO₂ – 0.5 lb/MMBtu based on firing ASTM D396 compliant #2 fuel oil (0.5% sulfur)

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 – 06-096 CMR 101

The BACT 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)
Boiler #1	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #2	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #3	0.26	0.26	1.66	0.47	0.12	0.01

Visible emissions from the each of the boilers 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.

Inland Hospital shall be limited to 200,000 gallons/yr of #2 fuel oil based on a calendar year.

Prior to January 1, 2016 or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the #2 fuel oil fired in Boilers #1, #2 and #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 or on the date specified in the statute, 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 or on the date specified in the statute, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). The specific dates contained in this paragraph reflect the current dates in the statute as of the effective date of this license; however, if the statute is revised, the facility shall comply with the revised dates upon promulgation of the statute revision.

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 type of fuel used and sulfur content of the fuel.

3. 40 CFR Part 63 Subpart JJJJJ

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 considered existing oil boilers.

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 Inland Hospital 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 is due no later than January 20, 2014. [40 CFR Part 63.11225(a)(2)]

ii. Boiler Tune-Up Program

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

(b) The boiler tune-up program, conducted 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; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr (Boilers #1 and #2) or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr (Boiler #3). [40 CFR Part 63.11223(b)(1)]
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 inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the

previous inspection for boilers greater than 5 MMBtu/hr (Boilers #1 and #2) or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr (Boiler #3). [40 CFR Part 63.11223(b)(3)]

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)]
- (c) After conducting the initial boiler tune-up, 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)]
- (d) The facility shall implement a boiler tune-up program after the initial tune-up and initial compliance report (called a Notification of Compliance Status) has been submitted.
1. 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:

Boiler Category	Tune-Up Frequency
Existing oil fired boiler with a heat input capacity of >5 MMBtu/hr (Boilers #1 & #2)	Every 2 years
Existing oil fired boiler with a heat input capacity of ≤5MMBtu/hr (Boiler #3)	Every 5 years

[40 CFR Part 63.11223(a) and Table 2]

2. 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 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)]

D. Annual Emissions

1. Total Annual Emissions

Inland Hospital shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits for Boilers #1, #2 and #3 were calculated based on a combined 200,000 gal/yr of #2 fuel oil:

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
Boilers #1, #2 and #3	1.1	1.1	7.1	2.0	0.5	0.1
Emergency Generator #1	0.1	0.1	0.1	3.9	0.8	0.3
Total TPY	1.2	1.2	7.2	5.9	1.3	0.4

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, Inland Hospital 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:

Pollutant	Tons/Year
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-110-71-K-M subject to the conditions found in Air Emission License A-110-71-J-R, and in 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.

SPECIFIC CONDITIONS

The following shall replace Condition (16) in License A-110-71-J-R.

(16) Boilers #1, #2 and #3

A. Fuel

1. Total fuel use for Boilers #1, #2 and #3 shall not exceed a combined 200,000 gal/yr of #2 fuel oil based on a calendar year. [06-096 CMR 115, BACT]
2. Prior to January 1, 2016 or the date specified in 38 MRSA §603-A(2)(A)(3), 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, BACT]
3. Beginning January 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), 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 or on the date specified in 38 MRSA §603-A(2)(A)(3), 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, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boilers #1, #2, #3	PM	0.08	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)
Boiler #1	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #2	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #3	0.26	0.26	1.66	0.47	0.12	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]

The following shall replace Condition (17) (B) in License A-110-71-J-R.

B. Emergency Generator #1 is limited to 500 hours per year of total operation, based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115]

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF May, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Mar Allen Robert Cove for
PATRICIA W. AHO, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-110-71-J-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 3/25/2013

Date of application acceptance: 4/5/2013

Date filed with the Board of Environmental Protection:

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



