



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**St. Joseph Hospital  
Penobscot County  
Bangor, Maine  
A-237-71-O-R/M (SM)**

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

**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 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

St. Joseph Hospital (SJH) has applied to renew their Air Emission License permitting the operation of emission sources associated with their healthcare facility.

This license includes a minor revision in order to change the name designations of two boilers. Previous license amendment A-237-71-N-A (dated May 31, 2011) included the addition of two new boilers, designated Boilers #7 and #8. The changed designated name for Boilers #7 and #8, as decided by SJH, are Boilers #4 and #5.

The equipment addressed in this license is located at 360 Broadway in Bangor, Maine.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

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 04769  
(207) 764-0477 FAX: (207) 760-3143

**Boilers**

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Install. Date</u>	<u>Stack #</u>
Boiler #1	5.3	5,146	Natural Gas	1963	1
		37.9	No. 2 Fuel Oil		
Boiler #2	5.3	5,146	Natural Gas	1963	1
		37.9	No. 2 Fuel Oil		
Boiler #3	10.5	10,194	Natural Gas	1963	1
		75.0	No. 2 Fuel Oil		
Boiler #4 *	3.0	2,913	Natural Gas	2010	2
Boiler #5 **	3.0	2,913	Natural Gas	2010	2

\* Boiler #4 was previously licensed as Boiler #7 in amendment A-237-71-N-A (dated May 31, 2011). The unit remains the same except for its designated name.

\*\* Boiler #5 was previously licensed as Boiler #8 in amendment A-237-71-N-A (dated May 31, 2011). The unit remains the same except for its designated name.

**Generators**

<u>Equipment</u>	<u>Power Output (KW)</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Install. Date</u>	<u>Stack #</u>
Emergency Generator #5	350	3.7	27	Diesel, 0.0015%	1996	1
Emergency Generator #6	500	5.6	41	Diesel, 0.0015%	1996	N/A

**C. Application Classification**

The application for SJH does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a minor revision and a renewal of currently licensed emission units only and has been processed as such through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). With the fuel limit on Boilers #1, #2, #3, #4 and #5, and the operating hour restrictions on the emergency generators, the facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor, and is also licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of HAP.

## II. BEST PRACTICAL TREATMENT (BPT)

### A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 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. Boilers #1, #2, #3, #4 and #5

SJH operates five boilers to provide hospital building heat and hot water, designated Boilers #1, #2, #3, #4 and #5. Boilers #1 - #3 originally fired No. 5 fuel oil but in 2009 became dual-fired units using natural gas as the primary fuel and No. 2 fuel oil as the secondary fuel. Boilers #4 and #5 only fire natural gas. The boilers are rated at 5.3 MMBtu/hr, 5.3 MMBtu/hr, 10.5 MMBtu/hr, 3.0 MMBtu/hr and 3.0 MMBtu/hr, respectively. Boilers #1 - #3 were installed in 1963 and exhaust to common Stack 1, while Boilers #4 and #5 were installed in 2010 and exhaust to common Stack 2.

For their own personal use and records, SJH maintains smoke opacity monitors on Boilers #1, #2 and #3. The smoke opacity monitors are used to measure smoke for the opacity emission limit, but are not required to be operated and maintained by this license. In addition, the operation of Boilers #4 and #5 are controlled with a Siemens Direct Digital Control (DDC) system.

Due to the size and year of installation of Boilers #1 and #2, the year of installation of Boiler #3 and the sizes of Boilers #4 and #5, the units 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 are based on the following:

Natural Gas

- PM/PM<sub>10</sub> – 0.05 lb/MMBtu based on 06-096 CMR 115, BPT
- SO<sub>2</sub> – 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
- NO<sub>x</sub> – 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
- Opacity – 06-096 CMR 101

No. 2 Fuel Oil

- PM/PM<sub>10</sub> – 0.08 lb/MMBtu based on 06-096 CMR 115, BPT
- SO<sub>2</sub> – Based on firing ASTM D396 compliant No. 2 fuel oil (0.5% sulfur); 0.5 lb/MMBtu
- NO<sub>x</sub> – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10
- Opacity – 06-096 CMR 101

The BPT emission limits for the boilers are the following:

Unit	Fuel Type	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	Natural Gas	0.27	0.27	0.01	0.51	0.43	0.03
	No. 2 Fuel	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #2	Natural Gas	0.27	0.27	0.01	0.51	0.43	0.03
	No. 2 Fuel	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #3	Natural Gas	0.53	0.53	0.01	1.02	0.86	0.06
	No. 2 Fuel Oil	0.84	0.84	5.29	1.50	0.38	0.03
Boiler #4	Natural Gas	0.15	0.15	0.01	0.29	0.24	0.02
Boiler #5	Natural Gas	0.15	0.15	0.01	0.29	0.24	0.02

Visible emissions from Stack 1 (serving Boilers #1-#3 and Emergency Generator #5) shall not exceed 30% opacity on a 6-minute block average, except for no more than three (3) six (6) minute block averages in a 3-hour period while the boiler(s) and generator are in operation. [06-096 CMR 101 (2)(B)(5)(i)] If Emergency Generator #5 is not in operation, then visible emissions from Stack #1 serving just the boilers, shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [06-096 CMR 101]

Visible emissions from Stack 2 (serving Boilers #4 and #5) shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

SJH shall be limited to a combined annual heat input of 45,000 MMBtu/yr of either natural gas, No. 2 fuel oil, or a combination of the two, based on a calendar year.

Prior to July 1, 2016, or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the No. 2 fuel oil fired at the facility shall be ASTM D396 compliant No. 2 fuel oil (maximum sulfur content of 0.5% by weight). Per 38 MRSA §603-A(2)(A)(3), beginning July 1, 2016, or on the date specified in the statute, the facility shall fire No. 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 No. 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, if applicable.

3. 40 CFR Part 63 Subpart JJJJJ

Boilers #1 - #5 are not 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 gas-fired boilers. A "gas-fired boiler" is defined as any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year. [40 CFR Part 63.11237] Boilers #1, #2 and #3 fire natural gas and No. 2 fuel, but the No. 2 fuel oil is fired according to the definition above; therefore Boilers #1 - #3, and natural gas fired Boilers #4 and #5, are exempt from 40 CFR Part 63, Subpart JJJJJ. Operation of Boilers #1, #2 and #3 such that the firing of No. 2 fuel oil does not meet the definition above would cause the boilers to be subject to 40 CFR Part 63 Subpart JJJJJ and all applicable requirements.

Any boilers designed to burn fuels besides natural gas prior to June 4, 2010 are considered an existing boiler under this rule. A boiler which currently fires natural gas, but converts back to firing another fuel (such as No. 2 fuel oil) in the future, would become subject as an existing oil-fired boiler at the time it is converted back to fuel oil.

C. Emergency Generators #5 and #6

SJH operates two emergency generators, designated Emergency Generators #5 and #6, to supply electricity to their computer system, emergency lighting in the building and the boiler feed water pumps in the event that normal electrical service is interrupted. The emergency generators fire diesel fuel and are rated at 3.7 MMBtu/hour (350 kW power output) and 5.6 MMBtu/hour (500 kW power output). The generators were installed between 1995 and 1996.

Previously, Emergency Generators #5 and #6 were each licensed to participate in an ISO-New England Demand Response Program for a maximum of 60 hours per year. Current Federal Regulation 40 CFR Part 63, Subpart ZZZZ, applicable to the two emergency generators, now regulates emergency generators that opt to participate in a Demand Response Program. Therefore, SJH is allowed to participate in the Demand Response Program as long as it meets the conditions and requirements specified in 40 CFR Part 63, Subpart ZZZZ §63.6640(f)(2)(ii), which is discussed below in this section.

1. BPT Findings

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

- PM/PM<sub>10</sub> - 0.12 lb/MMBtu from 06-096 CMR 103
- SO<sub>2</sub> - Combustion of diesel fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO<sub>x</sub> - 4.41 lb/MMBtu based on AP-42, Table 3.3-1 dated 10/96 for Generator #5  
- 3.20 lb/MMBtu based on AP-42, Table 3.4-1 dated 10/96 for Generator #6 (Large engine)
- CO - 0.95 lb/MMBtu based on AP-42, Table 3.3-1 dated 10/96 for Generator #5  
- 0.85 lb/MMBtu based on AP-42, Table 3.4-1 dated 10/96 for Generator #6 (Large engine)
- VOC - 0.35 lb/MMBtu based on AP-42, Table 3.3-1 dated 10/96 for Generator #5  
- 0.09 lb/MMBtu based on AP-42, Table 3.4-1 dated 10/96 for Generator #6 (Large engine)
- Opacity - 06-096 CMR 101

The BPT emission limits for the generators are the following:

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM<sub>10</sub> (lb/hr)</u>	<u>SO<sub>2</sub> (lb/hr)</u>	<u>NO<sub>x</sub> (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Emergency Generator #5	0.44	0.44	0.01	16.32	3.52	1.30
Emergency Generator #6	0.67	0.67	0.01	17.92	4.76	0.50

Visible emissions from Emergency Generator #5, which exhausts to Stack #1 in combination with Boilers #1-#3, shall not exceed 30% opacity on a 6-minute block average, except for no more than three (3) six (6) minute block averages in a 3-hour period while the boilers are in operation. [06-096 CMR 101 (2)(B)(5)(i)] If all three boilers are not in operation, then visible emissions from Stack #1 serving just Emergency Generator #5, 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. [06-096 CMR 101]

Visible emissions from Emergency Generator #6 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. [06-096 CMR 101]

2. 40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to the emergency generators listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source and are not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does exempt these units; however SJH participates in a Demand Response Program with ISO-New England to be available for more than 15 hours per year and therefore is subject to the federal requirements.

a. Emergency Definition:

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

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE 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 RICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary RICE in emergency situations.

- (2) Paragraph (1) above notwithstanding, the emergency stationary RICE 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 RICE 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 RICE 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 provided in the following paragraphs:

- (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution center.
- (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
  - (a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
  - (b) 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.
  - (c) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
  - (d) The power is provided only to the facility itself or to support the local transmission and distribution system.
  - (e) 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.

Emergency Generators #5 and #6 shall be limited to the usage outlined in §63.6640(f) and therefore may be classified as existing emergency stationary RICE as defined in 40 CFR Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in §63.6640(f) may cause these engines to not be considered emergency engines and therefore subject to all the requirements for non-emergency engines.

b. 40 CFR Part 63, Subpart ZZZZ Requirements:

(1) Operation and Maintenance Requirements

	<b>Operating Limitations (40 CFR §63.6603(a) and Table 2(d))</b>
Compression ignition (diesel, fuel oil) units:  - Emergency Generator #5 - Emergency Generator #6	<ul style="list-style-type: none"> <li>- Change oil and filter every 500 hours of operation or annually, whichever comes first;</li> <li>- Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and</li> <li>- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.</li> </ul>

The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or SJH shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engines in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

(2) Optional Oil Analysis Program

SJH has the option of utilizing an oil analysis program which complies with the requirements of §63.6625(i) in order to extend the specified oil change requirement. If this option is used, SJH must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements

During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

(5) Annual Time Limit for Maintenance and Testing

The generators shall each 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 §63.6640(f)(4)(ii) are met. [40 CFR §63.6640(f)]

(6) Recordkeeping

SJH shall keep records that include maintenance conducted on the generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), SJH shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

(7) Requirements for Demand Response Availability Over 15 Hours Per Year (and greater than 100 brake hp)

If SJH 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 §63.6640(f)(4)(ii), SJH shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). 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](http://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 §63.6650(h)]

D. Annual Emissions

1. Total Annual Emissions

Because emissions are dependent on the fuel being fired, and SJH wishes to retain licensed capability to fire No. 2 fuel oil when natural gas is not available in the Boilers #1 - #3, the facility shall be restricted to the maximum annual emissions from the fuel which gives the highest tons per year quantity for each pollutant. The tons per year of pollutants were calculated based on the previously licensed limit of a combined maximum 45,000 MMBtu/yr of No. 2 fuel oil or natural gas fired in all the boilers. Due to these limitations, the highest emissions occur for CO and VOC when firing natural gas in the boilers and PM, PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> when firing number No. 2 fuel oil in the boilers. The generators tons per year limits were calculated based on an operation time of 100 hrs/yr for each unit.

**Total Licensed Annual Emissions for the Facility**

**Tons/year**

(used to calculate the annual license fee)

	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>
Boilers	1.80	1.80	11.33	3.21	1.83	0.12
Generator #5	0.02	0.02	0.01	0.82	0.18	0.06
Generator #6	0.03	0.03	0.01	0.90	0.24	0.03
<b>Total TPY</b>	<b>1.9</b>	<b>1.9</b>	<b>11.4</b>	<b>4.9</b>	<b>2.3</b>	<b>0.2</b>

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 (CO<sub>2</sub>e).

Based on the facility's fuel use limits, 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, SJH is below the major source

threshold of 100,000 tons of CO<sub>2</sub>e 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:

<b>Pollutant</b>	<b>Tons/Year</b>
PM <sub>10</sub>	25
SO <sub>2</sub>	50
NO <sub>x</sub>	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-237-71-O-R/M 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 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 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 #1 - #5**

A. Fuel

1. Total fuel use for Boilers #1, #2, #3, #4 and #5 shall not exceed an annual heat input of 45,000 MMBtu/year of either natural gas, No. 2 fuel oil, or a combination of the two, based on a calendar year basis. [06-096 CMR 115, BPT]
2. Prior to July 1, 2016 or the date specified in 38 MRSA §603-A(2)(A)(3), any No. 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 July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire No. 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 No. 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 (if applicable). 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:

Fuel Fired	Pollutant	lb/MMBtu	Origin and Authority
Natural Gas	PM	0.05	06-096 CMR 115, BPT
No. 2 Fuel Oil	PM	0.08	06-096 CMR 115, BPT

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

Emission Unit	Fuel Fired	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	Natural Gas	0.27	0.27	0.01	0.51	0.43	0.03
	No. 2 Fuel Oil	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #2	Natural Gas	0.27	0.27	0.01	0.51	0.43	0.03
	No. 2 Fuel Oil	0.42	0.42	2.67	0.76	0.19	0.01
Boiler #3	Natural Gas	0.53	0.53	0.01	1.02	0.86	0.06
	No. 2 Fuel Oil	0.84	0.84	5.29	1.50	0.38	0.03
Boiler #4	Natural Gas	0.15	0.15	0.01	0.29	0.24	0.02
Boiler #5	Natural Gas	0.15	0.15	0.01	0.29	0.24	0.02

D. Visible Emissions

- Visible emissions from Stack 1 (serving Boilers #1-#3 and Emergency Generator #5) shall not exceed 30% opacity on a 6-minute block average, except for no more than three (3) six (6) minute block averages in a 3-hour period while the boiler(s) and generator are in operation. [06-096 CMR 101 (2)(B)(5)(i)] If Emergency Generator #5 is not in operation, then visible emissions from Stack #1 serving just the boilers, shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [06-096 CMR 101]
- Visible emissions from Stack 2 (serving Boilers #4 and #5) shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [06-096 CMR 101]

(17) **Emergency Generators #5 and #6**

- Each of the emergency generators shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]

B. The diesel fuel sulfur content for Emergency Generators #5 and #6 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]

C. Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Emergency Generator #5	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Emergency Generator #6	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

D. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM<sub>10</sub> (lb/hr)</u>	<u>SO<sub>2</sub> (lb/hr)</u>	<u>NO<sub>x</sub> (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Emergency Generator #5	0.44	0.44	0.01	16.32	3.52	1.30
Emergency Generator #6	0.67	0.67	0.01	17.92	4.76	0.50

E. Visible Emissions

1. Visible emissions from Emergency Generator #5, which exhausts to Stack #1 in combination with Boilers #1-#3, shall not exceed 30% opacity on a 6-minute block average, except for no more than three (3) six (6) minute block averages in a 3-hour period while the boilers are in operation. [06-096 CMR 101 (2)(B)(5)(i)] If all three boilers are not in operation, then visible emissions from Stack #1 serving just Emergency Generator #5, 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. [06-096 CMR 101]
2. Visible emissions from Emergency Generator #6 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. [06-096 CMR 101]

F. Emergency Generators #5 and #6 shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:

1. SJH shall meet the following operational limitations for each of the compression ignition emergency generators:
  - a. Change the oil and filter annually,
  - b. Inspect the air cleaner annually and replace as necessary, and
  - c. Inspect the hoses and belts annually and replace as necessary.

A log shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115, BPT]

2. Oil Analysis Program Option

SJH has the option of utilizing an oil analysis program which complies with the requirements of §63.6625(i) in order to extend the specified oil change requirement. If this option is used, SJH must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

a. The generators shall each 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 to supply power as part of a financial arrangement with another entity unless the conditions in §63.6640(f)(4)(ii) 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 §63.6640(f) and 06-096 CMR 115]

b. SJH shall keep records that include maintenance conducted on the generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), SJH shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

5. Operation and Maintenance

The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or SJH shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

7. Requirements For Demand Response Availability Over 15 Hours Per Year (and greater than 100 brake hp)

If SJH 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 §63.6640(f)(4)(ii), the facility shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). 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](http://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 §63.6650(h)]

St. Joseph Hospital  
Penobscot County  
Bangor, Maine  
A-237-71-O-R/M (SM)

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Departmental  
Findings of Fact and Order  
Air Emission License  
Renewal/ Minor Revision

- (18) SJH 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 27 DAY OF February, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marie Allen Robert Core 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 of this license, 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: 10/18/2012

Date of application acceptance: 10/19/2012

Date filed with the Board of Environmental Protection:

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

