



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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COMMISSIONER

Eastern Maine Medical Center)
Penobscot County) Departmental
Bangor, Maine) Findings of Fact and Order
A-184-71-O-R/M (SM)) Air Emission License

After review of the air emission license renewal application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A, Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Eastern Maine Medical Center (EMMC) of Bangor, Maine has applied to renew their Air Emission License, permitting the operation of emission sources associated with their hospital.

EMMC has requested a modification to their License in order to re-license Generator #5 that was not installed within the 18 month term granted by Air Emission License A-184-71-M-A. EMMC has requested that four new natural gas snow melters be added to the License. A reduction in the boiler fuel limit will be taken to prevent an emission increase. EMMC has also requested that Boiler #3 be removed from the license as it has been taken out of service.

B. Emission Equipment

EMMC is authorized to operate the following air emission units:

Fuel Burning Equipment

Equipment	Date of Construction	Maximum Capacity (MMBtu/hr)	Fuel Type	Maximum Firing Rate	Stack #
Boiler #1	1972	14.6	#2 or diesel	104.3 gal/hr	1
Boiler #2	1972	14.6	#2 or diesel	104.3 gal/hr	1
Boiler #4	1974	21.0	#2 or diesel	150 gal/hr	1
			Natural Gas	20,388 scf/hr	
Boiler #5	1974	21.0	#2 or diesel	150 gal/hr	1
			Natural Gas	20,388 scf/hr	
Boiler #6	1985	21.0	#2 or diesel	150 gal/hr	1
			Natural Gas	20,388 scf/hr	

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Electrical Generation Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Firing Rate	Fuel Type	Date of Installation	Stack
Generator #1	4.88	35.6 gal/hr	On-Road Diesel	1991	2
Generator #2	14.6	107 gal/hr	On-Road Diesel	1998	3
Generator #3	14.6	107 gal/hr	On-Road Diesel	1998	4
Generator #5	14.4	104.8 gal/hr	On-Road Diesel	TBD	6
Cogen Turbine	64.4 (gas) 63.5 (oil)	62,524 scf/hr 454 gal/hr	Nat. Gas #2 oil or Diesel @ 0.05% Sulfur	2006	Cogen

EMMC has a fifth emergency generator (Generator #4) on site, but it is only on-site for storage purposes, and is noted for inventory purposes only.

New Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (scf/hr)</u>	<u>Fuel Type</u>
Snow Melter #1	9.0 MMBtu	9000	Natural Gas
Snow Melter #2	9.0 MMBtu	9000	Natural Gas
Snow Melter #3	9.0 MMBtu	9000	Natural Gas
Snow Melter #4	9.0 MMBtu	9000	Natural Gas

C. Application Classification

Emission from this source will not increase as a result of this modification. Therefore, this application is determined to be a renewal of a Synthetic Minor License including 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 (last amended December 24, 2005). 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 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

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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 and #2

Boilers #1 and #2 each have a heat input capacity of 14.6 MMBtu/hr and were manufactured in 1972. They are therefore not subject to New Source Performance Standards (NSPS) Subpart Dc.

BPT for Boilers #1 and #2 is the following:

1. *Low Sulfur Fuel*, 06-096 CMR 106 (last amended June 9, 1999) regulates fuel sulfur content. However, the use of #2 fuel oil that meets the criteria in ASTM D396 or diesel fuel, with a maximum sulfur content of 0.5% is more stringent and shall be considered BPT.
2. *Fuel Burning Equipment Particulate Emission Standard*, 06-096 CMR 103 (last amended November 3, 1990) regulates PM emission limits. However, a more stringent BPT limit of 0.024 lb/MMBtu was established in Air Emission License A-184-71-K-A/R/M. PM₁₀ limits are derived from PM limits.
3. Air Emission License A-184-71-K-A/R/M established the following BPT emission limits:
 - a. SO₂ - 0.50 lb/MMBtu
 - b. NO_x - 0.25 lb/MMBtu
 - c. CO - 0.07 lb/MMBtu
 - d. VOC - 0.025 lb/MMBtu
4. Boilers #1 - #6 vent through a common stack. Therefore, visible emissions from Stack 1 shall not exceed an opacity of 30 percent 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.

C. Boilers #4, #5 and #6

Boilers #4, #5 and #6 each have a heat input capacity of 21.0 MMBtu/hr. Boilers #4 and #5 were manufactured in 1974 and Boiler #6 was manufactured in 1985. These boilers are therefore not subject to New Source Performance Standards (NSPS) Subpart Dc.

BPT for Boiler #4, #5 and #6 is the following:

1. 06-096 CMR 106 regulates fuel sulfur content. However, the use of #2 fuel oil that meets the criteria in ASTM D396, diesel fuel with a maximum

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sulfur content of 0.5%, or natural gas is more stringent and shall be considered BPT.

2. 06-096 CMR 103 regulates PM emission limits. However, more stringent BPT limits of 0.024 lb/MMBtu when firing #2 fuel oil or diesel fuel, and 0.01 lb/MMBtu when firing natural gas were established in Air Emission License A-184-71-K-A/R/M. PM_{10} limits are derived from PM limits.
3. Air Emission License A-184-71-K-A/R/M established the following BPT emission limits when firing #2 fuel oil or diesel fuel:

- a. SO₂ - 0.50 lb/MMBtu
- b. NO_x - 0.25 lb/MMBtu
- c. CO - 0.07 lb/MMBtu
- d. VOC - 0.025 lb/MMBtu

4. SO₂ emission data for natural gas combustion is based on AP-42 data dated 7/98.
5. Air Emission License A-184-71-K-A/R/M established the following BPT emission limits when firing natural gas:

- a. NO_x - 0.118 lb/MMBtu
- b. CO - 0.15 lb/MMBtu
- c. VOC - 0.016 lb/MMBtu

6. Boilers #1 - #6 vent through a common stack. Therefore, visible emissions from Stack 1 shall not exceed an opacity of 30 percent 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.

D. Emergency Generators #1, #2, and #3

EMMC has three existing emergency diesel generators (Generators #1, #2, #3). The emergency generators are rated at 4.88, 14.6, and 14.6 MMBtu/hr respectively.

Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

A BPT summary of Emergency Generators #1, #2, and #3 is the following:

1. Emergency Generators #1, #2, and #3 shall each be limited to 400 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.

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2. 06-096 CMR 106 regulates fuel sulfur content. However, the use of diesel fuel with a sulfur content not to exceed 0.05% is more stringent and shall be considered BPT.
3. 06-096 CMR 103 regulates PM emission limits. The PM₁₀ limits are derived from the PM limits.
4. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96. for Generator #1, and on manufacturer's not-to-exceed data for Generators #2 and #3.
5. Visible emissions from Emergency Generators #1, #2, and #3 shall each not exceed 30% opacity on a six (6) minute block average, except for no more than two (2), six (6) minute block averages in a continuous 3-hour period.

E. Emergency Generator #5

EMMC proposes to install one new emergency generator (Emergency Generator #5) that is rated at 14.4 MMBtu/hr.

Emergency Generator is defined as any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary engines used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary engines used to pump water in the case of fire or flood. Stationary engines used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Because Emergency Generator #5 will be purchased after July 11, 2005 and manufactured after April 1, 2006, it will be subject to New Source Performance Standards 40 CFR Part 60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.

A BACT summary for Emergency Generator #5 is the following:

1. 06-096 CMR 106 regulates fuel sulfur content. However, the use of diesel fuel with a sulfur content not to exceed 500 ppm until October 1, 2010, and 15 ppm after October 1, 2010, is more stringent and shall be considered BACT.
2. Emergency Generator #5 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. Emergency Generator #5 shall be limited to 400 hours per year of total operation. Both of these limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.

3. Emergency Generator #5 shall be equipped with a non-resettable hour meter.
4. 06-096 CMR 103 regulates PM emission limits. However, the emission factor of 0.014 lb/MMBtu (based on manufacturer data) is more stringent and shall be considered BACT. The PM₁₀ limits are derived from the PM limits.
5. CO, NO_x and VOC emissions are derived from manufacturer's not-to-exceed data.
6. PM, CO and NO_x + VOC emissions are subject to the requirements set forth in 40 CFR 60, Subpart III (Tier 2 standards). Certification from the manufacturer shall be required to demonstrate compliance.
7. EMMC shall operate and maintain Emergency Generator #5 in accordance with the manufacturer's written instructions. EMMC shall not change settings that are not approved in writing by the manufacturer.
8. Visible emissions from the Emergency Generator #5 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.
9. Visible emissions from Emergency Generator #5 shall not exceed:
 1. 20% during the acceleration mode;
 2. 15% during the lugging mode; and
 3. 50% during the peaks in either the acceleration or lugging modes

F. Cogeneration Plant

The Cogeneration Plant includes a Solar combustion turbine generator (CTG) and an unfired heat recovery steam generator (HRSG). The CTG has an electric generating capacity of 4.6 MW (at International Standards Organization (ISO) conditions) and is capable of firing natural gas and liquid fuels (#2 fuel oil and diesel fuel). The dual-fuel design provides EMMC with an alternative fuel option in the event the natural gas supply is interrupted or becomes economically unfavorable due to market pricing.

The amount of liquid fuel licensed to be fired in the CTG without add-on NO_x emission controls installed will be limited to keep campus-wide potential NO_x emissions under the major source threshold of 100 tons per year.

The CTG is subject to the New Source Performance Standards (NSPS) Part 60, Subpart KKKK (Stationary Combustion Turbines).

A BACT determination was established in Air Emission License A-184-71-M-A and now represents BPT for the Cogeneration Plant:

1. Clean fuels and good combustion practices to limit PM/PM₁₀ emissions to no greater than 0.042 lb/MMBtu while firing gas and 0.061 lb/MMBtu while firing oil.

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2. Natural gas and very low sulfur #2 fuel oil (0.05% sulfur by weight) to achieve a maximum SO₂ emission rate of 0.18 lb/hr while firing gas and 3.3 lb/hr while firing oil.
3. SoLoNO_x Dry low NO_x combustors to limit NO_x emissions to 25 ppm on natural gas and 96 ppm on #2 fuel oil (both corrected to 15% O₂). Solar Turbines guarantees 15 ppm NO_x on "gas only" combustors because the combustor design is different. Since only one fuel is involved, the combustion design can be maximized for gas fuel. Dual-fuel combustors must be larger in size to accommodate the necessary space for two fuel delivery systems, resulting in slightly higher NO_x emission performance.
4. SoLoNO_x Dry low NO_x combustors to limit CO emissions to less than 7.4 lb/hr while firing gas and less than 7.5 lb/hr while firing #2 fuel oil.
5. Combustion controls to limit VOC emissions to less than 10 tons/year.
6. Visible emissions from the CTG shall not exceed 10 percent opacity on a six (6) minute block average basis, except for no more than one (1), six (6) minute block average in a 3-hour period.

If EMMC operates the turbine on oil for more than the equivalent of 90 days per year, EMMC will retrofit the CTG/HRSG with Selective Catalytic Reduction (SCR) technology. The retrofit shall take place within twelve (12) months of the turbine operating on oil for more than the equivalent of 90 days per year.

G. Snow Melters

EMMC is installing four Snow Melters, each rated at 9.0 MMBtu/hr. A BACT analysis for the Snow Melters is as follows:

1. The Snow Melters shall fire only natural gas.
2. The Snow Melters shall be limited to firing 18 MMscf combined of Natural Gas on a 12 month rolling total. A fuel meter shall be operated and maintained for compliance purposes.
3. 06-096 CMR 106 regulates fuel sulfur content. However, the use of natural gas is more stringent and shall be considered BACT.
4. 06-096 CMR 103 regulates PM emission limits. However a PM emission limit of 0.05 lb/MMBtu is more stringent and shall be considered BACT. The PM₁₀ limits are derived from the PM limits.
5. SO₂, NO_x, CO, and VOC emission limits are based on AP-42 data dated 2/98, for the combustion of natural gas.
6. Visible Emission from the Snow Melters shall not exceed 10% on a six minute block average basis.

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H. Facility Emissions

EMMC is limited to the following fuel usage and has the following annual emissions, based on a 12 month rolling total:

1. Combined fuel use (natural gas, #2 fuel oil, and diesel fuel) equivalent to 200,000 MMBtu per year in the existing boilers. Annual Licensed Emissions are calculated using the worst-case scenario of firing the following:
 - a. 100% liquid fuel fired for PM, SO₂, NO_x, and VOC.
 - b. 100% natural gas in boilers #4-#6 for CO (boilers #1 and #2 not operating).
2. Up to 941,871 gallons per year of liquid fuel in the CTG (which is equivalent to 90 days per year of oil use) without SCR technology installed.
3. 400 hours of operation on a 12 month rolling total for Generators #1, #2, #3, and #5 (each).
4. The Turbine's Total Annual Emissions for all pollutants except NO_x are based on year-round operation on liquid fuel with SCR installed, as this scenario results in the maximum potential emissions.
5. The Turbine's Total Annual Emissions for NO_x are based on the equivalent of 90 days of oil use, with the remaining turbine operating time on natural gas, as this scenario results in the maximum potential annual NO_x emissions.
6. Combined fuel use of 18 MMscf of Natural Gas on a 12 month rolling total in the Snow Melters.

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7. EMMC shall be restricted to the following annual emissions, based on a 12 month rolling total:

**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	2.38	2.38	50.38	25.00	15.00	2.52
Turbine	17.08	17.08	14.45	45.73 [25.60 (liquid fuel)] [20.13 (NG)]	32.85	9.64
Generator #1	0.12	0.12	0.05	*27.9	0.83	0.10
Generator #2	0.14	0.14	0.15		2.48	0.29
Generator #3	0.14	0.14	0.15		2.48	0.29
Generator #5	0.04	0.04	0.15		0.79	0.14
Snow Melters	0.46	0.46	0.01	0.90	0.76	0.05
Total TPY	20.36	20.36	65.34	99.53	55.19	13.03

* combined NO_x limit for all generators.

III. AMBIENT AIR QUALITY ANALYSIS

EMMC previously submitted an ambient air quality analysis in Air Emission License A-184-71-M-A; demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. An additional ambient air quality analysis is not required for this renewal.

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-184-71-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.

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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. [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

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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]

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SPECIFIC CONDITIONS

(16) Boilers #1 and #2

Emissions from Boiler #1 and #2 shall each not exceed the following when firing #2 fuel oil or diesel fuel: [06-096 CMR 115, 06-096 CMR 103, A-184-71-K-A/R/M, BPT]

Pollutant	lb/MMBtu	lb/hr
PM	0.024	0.35
PM ₁₀	n/a	0.35
SO ₂	n/a	7.35
NO _x	n/a	3.65
CO	n/a	1.02
VOC	n/a	0.37

(17) Boilers #4, #5 and #6

A. Emissions from Boiler #4, #5 and #6 shall each not exceed the following when firing #2 fuel oil or diesel fuel: [06-096 CMR 115, 06-096 CMR 103, A-184-71-K-A/R/M, BPT]

Pollutant	lb/MMBtu	lb/hr
PM	0.024	0.50
PM ₁₀	n/a	0.50
SO ₂	n/a	10.58
NO _x	n/a	5.25
CO	n/a	1.47
VOC	n/a	0.53

B. Emissions from Boilers #4, #5 and #6 shall each not exceed the following when firing natural gas: [06-096 CMR 115, 06-096 CMR 103, A-184-71-K-A/R/M, BPT]

Pollutant	lb/MMBtu	lb/hr
PM	0.01	0.21
PM ₁₀	n/a	0.21
SO ₂	n/a	0.01
NO _x	n/a	2.48
CO	n/a	3.15
VOC	n/a	0.34

(18) Fuel oil sulfur requirements for Boilers #1 - #6 [06-096 CMR 115, BPT]
 Liquid fuel fired in Boilers #1-#6 shall be limited to #2 fuel oil that meets the criteria in ASTM D396 or diesel fuel with a sulfur content not to exceed 0.5%. Records from the supplier documenting fuel type and sulfur content (diesel fuel only) shall be used to demonstrate compliance.

(19) Fuel use limits for Boiler #1 - #6 [06-096 CMR 115, BPT]
 Combined #2 fuel oil, diesel fuel, and natural gas heat input into all of the boilers shall not exceed 200,000 MMBtu on a 12-month rolling total. The following shall be used to determine the monthly heat input into all of the boilers:

$$\left(\frac{\text{galliquidfuel}}{\text{month}} \right) \left(\frac{0.14 \text{ MMBtu}}{\text{galliquid fuel}} \right) + \left(\frac{\text{scf nat. gas}}{\text{month}} \right) \left(\frac{0.00103 \text{ MMBtu}}{\text{scf nat. gas}} \right) = \frac{\text{MMBtu heat input to boilers}}{\text{month}}$$

(20) Visible emission requirements for Boilers #1 - #6 [06-096 CMR 101]
 Visible emissions from Stack 1 (shared by Boilers #1 - #6) shall not exceed an opacity of 30 percent 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.

(21) Emergency Generators #1, #2, and #3
 A. Emissions from Generator #1 shall not exceed the following: [06-096 CMR 115, 06-096 CMR 103, BPT]

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.59
PM ₁₀	n/a	0.59
SO ₂	n/a	0.25
NO _x	n/a	15.62
CO	n/a	4.15
VOC	n/a	0.44

B. Emissions from Emergency Generator #2 and #3 shall each not exceed the following: [06-096 CMR 115, 06-096 CMR 103, BPT]

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.71
PM ₁₀	n/a	0.71
SO ₂	n/a	0.75
NO _x	n/a	53.80
CO	n/a	12.41
VOC	n/a	1.46

- C. EMMC shall limit Generators #1 - #3 to 400 hr/yr of operation each (based on a 12 month rolling total). An hour meter shall be maintained and operated on each Generator. [06-096 CMR 115, BPT]
- D. Generators #1 - #3 shall not be used for peak shaving or for exporting power to the grid. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BPT]
- E. Generators #1 - #3 shall only be operated under the following conditions: [06-096 CMR 115, BPT]
 - 1. Readiness testing to monitor the condition of the generators and emergency power system distribution,
 - 2. Situations rising from the sudden and reasonably unforeseeable events beyond the control of the source, and;
 - 3. During times of power outage or instability to prevent emergency generator cold start delays, power interruptions, voltage variations, and emergency switchgear transfers, for which a scheduled and controlled manual switchover could prevent a life threatening or negative patient outcome.
- F. Generators #1 - #3 shall fire diesel fuel with a sulfur content not to exceed 0.05% by weight. Compliance shall be based on fuel records from the supplier documenting the percent sulfur of the fuel. [06-096 CMR 115, BPT]
- G. Visible emissions from Generators #1 - #3 shall each not exceed 30% opacity on a six (6) minute block average, except for no more than two (2), six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

(22) Generator #5

- A. Emergency Generator #5 is subject to all applicable requirements of 40 CFR, Part 60, Subpart, IIII.
- B. Generator #5 shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm. [40 CFR 60.4207(a)]
- C. Beginning October 1, 2010, Generator #5 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm. [40 CFR 60.4207(b)]
- D. Generator #5 shall not be used for peak shaving or for exporting power to the grid. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BACT]
- E. Generator #5 shall only be operated under the following conditions: [06-096 CMR 115, BACT]
 - 1. Readiness testing to monitor the condition of the generators and emergency power system distribution,
 - 2. Situations rising from the sudden and reasonably unforeseeable events beyond the control of the source, and;

3. During times of power outage or instability to prevent emergency generator cold start delays, power interruptions, voltage variations, and emergency switchgear transfers, for which a scheduled and controlled manual switchover could prevent a life threatening or negative patient outcome.
- F. Generator #5 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. Generator #5 shall be limited to 400 hours per year of total operation. Both of these limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR 60.4211(E) and 06-096 CMR 115, BACT]
- G. Generator #5 shall be equipped with a non-resettable hour meter. [40 CFR 60.4209(a)]
- H. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #5	PM	0.014	06-096 CMR 103(2)(B)(1)(a), BACT

- I. 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)
Generator #5	0.2	0.2	0.74	28.98	3.95	0.71

- J. PM, CO, and NO_x + VOC emissions are also subject to the requirements set forth in 40 CFR 60, Subpart III (Tier 2 standards). EMMC shall maintain documentation from the manufacturer on-site demonstrating that the generator model has been certified by the EPA to meet the applicable emission standards contained in Subpart III. [40 CFR 60, Subpart III, 06-096 CMR 103]
- K. EMMC shall operate and maintain Generator #5 in accordance with the manufacturer's written instructions. EMMC shall not change settings that are not approved in writing by the manufacturer. [40 CFR 60.4211(a)]
- L. Visible emissions from the Generator #5 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]

- M. Visible emissions from Emergency Generator #5 shall not exceed:
- a. 20% during the acceleration mode;
 - b. 15% during the lugging mode; and
 - c. 50% during the peaks in either the acceleration or lugging modes.
- [40 CFR 60.4205(b)]

(23) Combustion Turbine Generator (CTG)

- A. EMMC shall comply with the applicable New Source Performance Standards contained in 40 CFR, Part 60, Subpart KKKK.
- B. The sulfur content of the Natural gas and #2 fuel oil (or diesel fuel) used in the CTG shall not exceed the limits set forth in 40 CFR Part 60, Subpart KKKK. Records from the fuel suppliers documenting the sulfur content of the fuels shall be kept for compliance purposes. [06-096 CMR 115, BPT, 40 CFR Part 60, Subpart KKKK]
- C. EMMC shall not burn more than 941,871 gallons of liquid fuel in the CTG in a 12-month period without the installation and utilization of a selective catalytic reduction (SCR) unit as a NO_x pollution control device, as approved by the Department. Compliance with the fuel oil limit shall be demonstrated using fuel oil purchasing records and oil storage tank inventory readings. The estimated boiler fuel use shall then be subtracted from the total inventory to calculate the fuel use in the CGT. [06-096 CMR 115, BPT]
- D. If EMMC burns more than 941,871 gallons of liquid fuel in a 12-month period, EMMC shall install SCR technology in the CTG within twelve (12) months of the turbine exceeding the above oil consumption level. [06-096 CMR 115, BPT]
- E. When firing liquid fuel, emissions from the CTG shall not exceed the following [06-096 CMR 115, BPT]:

Pollutant	lb/MMBtu	lb/hr
PM	0.061	3.90
PM ₁₀	n/a	3.90
SO ₂	n/a	3.30
NO _x	n/a	23.70
CO	n/a	7.50
VOC	n/a	2.20

F. When firing natural gas, emissions from the CTG shall not exceed the following [06-096 CMR 115, BPT]:

Pollutant	lb/MMBtu	lb/hr
PM	0.042	2.70
PM ₁₀	n/a	2.70
SO ₂	n/a	0.18
NO _x	n/a	6.10
CO	n/a	7.40
VOC	n/a	0.40

G. When firing natural gas, NO_x emissions from the CTG shall not exceed 25 ppmdv (15%O₂). Compliance with this NO_x emission limit and the NO_x emission standards for natural gas and liquid fuels established in 40CFR60 Subpart KKKK will be demonstrated by meeting the annual emission performance test requirements contained in Subpart KKKK. If the annual performance test is less than or equal to 75% of the NO_x emission limit, frequency of subsequent testing may be reduced to once every two years. [06-096 CMR 115, BPT, 40 CFR 60.4340]

H. Visible emissions from the CTG shall not exceed 10 percent opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. This opacity limit shall not apply during the first four hours following the initiation of cold startup or planned shutdown, provided that operating records are available to demonstrate that the facility was being operated to minimize emissions. [06-096 CMR 101, BPT]

(24) **Snow Melters #1 - #4**

A. The Snow Melters shall fire only natural gas. [06-096 CMR 115, BACT]

B. The Snow Melters shall be limited to a combined firing of 18 MMscf of Natural Gas on a 12 month rolling total. A fuel meter shall be operated and maintained for compliance purposes. [06-096 CMR 115, BACT]

C. Emissions shall not exceed the following for each Snow Melter [06-096 CMR 115, 06-096 CMR 103, BACT]:

Emission Unit		PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Snow Melter	lb/MMBtu	0.05	-	-	-	-	-
	lb/hr	0.45	0.45	0.01	0.90	0.76	0.05

Eastern Maine Medical Center
Penobscot County
Bangor, Maine
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D. Visible Emissions from each Snow Melter shall not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 101, BACT]

(25) **Annual Emission Statement**

In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department, by **July 1 for 2009 and May 15 thereafter**, the information necessary to accurately update the State's emission inventory by means of:

1) A computer program and accompanying instructions supplied by the Department;

Or;

2) A written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP

Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017
Phone: (207) 287-2437

Eastern Maine Medical Center)
Penobscot County)
Bangor, Maine)
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- (26) EMMC 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 26th DAY OF December 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brackley
DAVID P. LITTELL, COMMISSIONER

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/2/2008

Date of application acceptance: 1/28/2008

Date filed with the Board of Environmental Protection: _____

This Order prepared by Jonathan Voisine, Bureau of Air Quality.

