



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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GOVERNOR

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COMMISSIONER

Maine Medical Center
Cumberland County
Portland, Maine
A-431-71-K-R (SM)

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

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

I. REGISTRATION

A. Introduction

1. Maine Medical Center (MMC) has applied to renew their Air Emission License permitting the operation of emission sources associated with their health care facility.
2. MMC has also requested the license be updated to reflect the removal of Boilers #1, #2, #3 and #4, and the decommissioning of the Boiler Room Generator, as well as NDF #1 and #2 Generators, upon commissioning of the Central Utility Plant.
3. The equipment addressed in this license is located at 22 Bramhall Street, Portland, ME.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity</u> (MMBtu/hr)	<u>Maximum Firing Rate</u>	<u>Fuel Type,</u> <u>% sulfur</u>	<u>Install.</u> <u>Date</u>	<u>Stack</u> <u>#</u>
CUP Boiler #1	46.0	329 gph 46,000 scf/h	#2 oil, 0.4% Nat. Gas	2007	1
CUP Boiler #2	46.0	329 gph 46,000 scf/h	#2 oil, 0.4% Nat. Gas	2007	1
CUP Boiler #3	46.0	329 gph 46,000 scf/h	#2 oil, 0.4% Nat. Gas	2007	1

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AUGUSTA, MAINE 04333-0017
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312 CANCO ROAD
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PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04679-2094
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Generators

<u>Equipment</u>	<u>Maximum Capacity</u> (MMBtu/hr)	<u>Firing Rate</u> (gal/hr)	<u>Fuel Type,</u> <u>% sulfur</u>	<u>Install.</u> <u>Date</u>	<u>Stack</u> <u>#</u>
Fire Pump Engine	1.33	9.5	Diesel, 0.0015%	1984	5
Computer Room Generator	2.45	17.5	Diesel, 0.0015%	1993	7
Generator #7	11.5	84.0	Diesel, 0.0015%	1997	8
CUP Generator #1	20.7	147.5	Diesel, 0.0015%	2007	2
CUP Generator #2	19.8	141.3	Diesel, 0.0015%	2011	9

C. Application Classification

The application for MMC does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended). With the fuel limit on the boilers and the operating hours restriction on the emergency generators and fire pump, the facility is licensed below the major source thresholds and is considered a synthetic minor.

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. Central Utility Plant (CUP) Boilers #1, #2 and #3

CUP Boilers #1, #2 and #3 are Cleaver Brooks Model CBL-LN packaged firetube boilers equipped with Industrial Combustion Model LN1LG burners. Each boiler has a design capacity of 46.0 MMBtu/hr and can fire natural gas and 0.4% sulfur #2 fuel oil. The boilers were installed in 2007 and exhaust through common Stack #1.

Due to the size of the boilers, they are subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

1. BPT Findings

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

When firing Natural Gas:

- PM/PM₁₀ – 0.01 lb/MMBtu based on BACT (A-431-71-H-A)
- SO₂ – 0.001 lb/MMBtu based on BACT (A-431-71-H-A)
- NO_x – 0.035 lb/MMBtu based on BACT (A-431-71-H-A)
- CO – 0.037 lb/MMBtu based on BACT (A-431-71-H-A)
- VOC – 0.02 lb/MMBtu based on BACT (A-431-71-H-A)
- Opacity – Visible emissions from the boiler firing natural gas shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a three (3) hour period.

The BPT emission limits for the boilers firing natural gas are the following:

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
CUP Boiler #1	0.46	0.46	0.05	1.61	1.70	0.92
CUP Boiler #2	0.46	0.46	0.05	1.61	1.70	0.92
CUP Boiler #3	0.46	0.46	0.05	1.61	1.70	0.92

When firing #2 Fuel Oil:

- PM/PM₁₀ – 0.02 lb/MMBtu based on BACT (A-431-71-H-A)
- SO₂ – 0.40 lb/MMBtu based on firing #2 fuel oil (0.4% sulfur);
BACT (A-431-71-H-A)
- NO_x – 0.19 lb/MMBtu, based on BACT (A-431-71-H-A)
- CO – 0.07 lb/MMBtu, based on BACT (A-431-71-H-A)
- VOC – 0.03 lb/MMBtu, based on BACT (A-431-71-H-A)
- Opacity – Visible emissions from each boiler firing #2 fuel oil shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a three (3) hour period.

The BPT emission limits for the boilers firing #2 fuel oil are the following:

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
CUP Boiler #1	0.92	0.92	18.53	8.74	3.22	1.38
CUP Boiler #2	0.92	0.92	18.53	8.74	3.22	1.38
CUP Boiler #3	0.92	0.92	18.53	8.74	3.22	1.38

MMC shall be limited to 3,214,286 gallons per year of #2 fuel oil with a sulfur content not to exceed 0.4 percent, or 450,000,000 standard cubic feet per year of natural gas, or 450,000 MMBtu/yr (million British thermal units per year) in any combination of the two.

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

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use and fuel heat input, as applicable, both on a monthly and 12-month rolling total basis. Documentation shall include the type of fuel used and sulfur content of the fuel, if applicable.

3. 40 CFR Part 63 Subpart JJJJJ

CUP Boilers #1, #2 and #3 may be subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). These 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 Maine Department of Environmental Protection has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however MMC 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 was due on September 17, 2011. [40 CFR Part 63.11225(a)(2)]

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented to include the tune-up of applicable boilers by March 21, 2012, according to the rule currently in place. [40 CFR Part 63.11196(a)(1)] However, a No Action Assurance letter was issued on March 13, 2012, stating that EPA will exercise its enforcement discretion to not pursue enforcement action for failure to complete the required tune-up by the stated compliance date. The rule is expected to have a future compliance date in either 2013 or 2014 once the final revisions are promulgated.

(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; however, the burner must be inspected at least once every 36 months. [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. [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 (ppm), by volume, and oxygen in volume percent, before and after adjustments are made. [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 one week of start-up. [40 CFR Part 63.11223(b)(7)]
- (c) A Notification of Compliance Status shall be submitted to EPA no later than 120 days after conducting the initial boiler tune-up. [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 has been submitted.
1. Each tune-up shall be conducted at a frequency specified by the rule and based on the size and age of the boiler. [40 CFR Part 63.11223(a)]
 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 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 type and amount of fuel 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)]

iii. Energy Assessment

- (a) A one-time energy assessment shall be performed by a qualified energy assessor on the applicable boilers by March 21, 2014. [40 CFR Part 63.11196(a)(3)]
- (b) The energy assessment shall include a visual inspection of the boiler system; an evaluation of operating characteristics of energy using systems, operating and maintenance procedures, and unusual operating constraints; an inventory of major systems consuming energy from affected boiler(s); a review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage; a list of major energy conservation measures; a list of the energy savings potential of the energy conservation measures identified; and a comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments. [40 CFR Part 63, Table 2(4)]
- (c) A Notification of Compliance Status shall be submitted to EPA no later than 120 days after conducting the energy assessment. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(c)]

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.

C. Emergency Generators

MMC operates a total of four emergency generators: the Computer Room Generator, Generator #7, and CUP Generators #1 and #2, as well as a fire pump engine. The emergency generators are rated at 2.45, 11.5, 20.7 and 19.8 MMBtu/hr respectively; the fire pump is rated at 1.33 MMBtu/hr and all five fire diesel fuel. The generators were manufactured and installed in 1993, 1997, 2007 and 2011 respectively; the fire pump engine was manufactured and installed in 1984.

Upon commissioning of the Central Utility Plant, previously-licensed generators - Boiler Room Generator, NDF #1 and #2 generators - were decommissioned, although they remain in place. All electrical and fuel lines have been disconnected, and the units have been rendered inoperable.

Computer Room Generator, Generator #7 and Fire Pump Engine:

1. BPT Findings

The BPT emission limits for the Computer Room Generator are based on the following:

PM/PM ₁₀	- 0.12 lb/MMBtu from 06-096 CMR 103
SO ₂	- based on firing 0.0015% sulfur, 0.01 lb/MMBtu
NO _x	- 4.37 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
CO	- 0.95 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
VOC	- 0.347 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
Opacity	- Visible emissions from the diesel emergency generator 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 three (3) hour period.

The BPT emission limits for the Generator #7 are based on the following:

PM/PM ₁₀	- 0.12 lb/MMBtu from 06-096 CMR 103
SO ₂	- based on firing 0.0015% sulfur, 0.01 lb/MMBtu
NO _x	- 4.43 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
CO	- 0.845 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
VOC	- 0.104 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
Opacity	- Visible emissions from the diesel emergency generator 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 three (3) hour period.

The BPT emission limits for the Fire Pump engine are based on the following:

- PM/PM₁₀ – 0.20 lb/MMBtu from 06-096 CMR 103
- SO₂ – based on firing 0.0015% sulfur, 0.01 lb/MMBtu
- NO_x – 4.37 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
- CO – 0.95 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
- VOC – 0.35 lb/MMBtu, from previous BACT (A-431-71-G-M/R)
- Opacity – Visible emissions from the diesel fire pump engine 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 three (3) hour period.

The BPT emission limits for the generators and fire pump are the following:

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
Computer Room Gen.	0.29	0.29	0.01	10.58	2.30	0.84
Generator #7	1.38	1.38	0.02	50.95	9.72	1.20
Fire Pump Engine	0.27	0.27	0.01	5.81	1.26	0.47

Each of the emergency generators and the fire pump shall be limited to 500 hours of operation a year, based on a 12-month rolling total. MMC shall keep records of the hours of operation for each unit.

Emergency generators and fire pump are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are not to be used for prime power when reliable offsite power is available; nor used to supply power to an electric grid as part of a financial arrangement with an independent system operator (ISO) or another entity.

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 not applicable to the emergency generators and fire pump listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source; however, they are considered exempt from the requirements of Subpart ZZZZ since they are categorized as institutional emergency engines.

3. 40 CFR Part 60, Subpart IIII

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is not applicable to the emergency generators and fire pump listed above since the units were ordered and installed before July 11, 2005.

CUP Generators #1 and #2

1. BPT Findings

The BPT emission limits for the Cup Generators #1 and #2 firing diesel fuel are based on the following:

CUP Generator #1

PM/PM ₁₀	– 0.08 lb/MMBtu based on vendor supplied “not to exceed” data, A-431-71-H-A
SO ₂	– based on firing 0.0015% sulfur, 0.0015 lb/MMBtu
NOx	– 2.29 lb/MMBtu, based on vendor supplied “not to exceed” data, A-431-71-H-A
CO	– 0.95 lb/MMBtu, based on vendor supplied “not to exceed” data, A-431-71-H-A
VOC	– 0.36 lb/MMBtu, based on vendor supplied “not to exceed” data, A-431-71-H-A
Opacity	– Visible emissions from the diesel generator 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 three (3) hour period.

CUP Generator #2

PM/PM ₁₀	– 0.024 lb/MMBtu based on vendor supplied “not to exceed” data, A-431-71-J-A
SO ₂	– based on firing 0.0015% sulfur, 0.0015 lb/MMBtu
NOx	– 2.772 lb/MMBtu, based on vendor supplied “not to exceed” data, A-431-71-J-A
CO	– 0.98 lb/MMBtu, based on vendor supplied “not to exceed” data, A-431-71-J-A

- VOC – 0.057 lb/MMBtu, based on vendor supplied “not to exceed” data, A-431-71-J-A
- Opacity – Visible emissions from the diesel generator 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 three (3) hour period.

The BPT emission limits for the generators are the following:

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
CUP Generator #1	1.66	1.66	0.03	47.40	5.18	0.83
CUP Generator #2	0.30	0.30	0.03	34.10	1.20	0.70

Each of the emergency generators shall be limited to 500 hours of operation per year, based on a 12-month rolling total. MMC shall keep records of the hours of operation for each unit.

2. 40 CFR Part 60, Subpart IIII

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to the emergency generators listed above as the units were ordered after July 11, 2005 and manufactured after April 1, 2006. By meeting the requirements of Subpart IIII, the units also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

Emergency Definition:

Emergency stationary internal combustion engine is defined in 40 CFR Part 60, Subpart IIII as any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, et cetera. Stationary CI ICE 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.

40 CFR Part 60, Subpart IIII Requirements:

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

The diesel fuel fired in the generators shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 CFR §60.4207(b)]

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

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

The generators shall each be limited to 100 hours per year for maintenance and testing. Up to 50 hours per year of the 100 hours per year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another entity). [40 CFR §60.4211(f)]

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

D. Annual Emissions

1. Total Annual Emissions

MMC shall be restricted to the following annual emissions, based on a 12-month rolling total, and the following:

- A fuel limit for CUP Boilers #1, #2 and #3, of 3,214,286 gallons per year of #2 fuel oil with a sulfur content not to exceed 0.4 percent, or 450,000,000 standard cubic feet per year of natural gas, or 450,000 MMBtu/yr in any combination of the two, based on a 12-month rolling total.
- An operating hours limit on each of the four emergency generators and the fire pump of 500 hours per year, based on a 12-month rolling total.

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

<u>Unit</u>	<u>PM</u>	<u>PM₁₀</u>	<u>SO₂</u>	<u>NO_x</u>	<u>CO</u>	<u>VOC</u>
CUP Boilers #1, #2 & #3 *	4.50	4.50	90.64	42.75	15.75	6.75
Fire Pump	0.07	0.07	0.01	1.45	0.32	0.12
Computer Room Gen.	0.07	0.07	0.01	2.64	0.57	0.21
Generator #7	0.35	0.35	0.01	12.74	2.43	0.30
CUP Generator #1	0.41	0.41	0.01	11.85	1.29	0.21
CUP Generator #2	0.07	0.07	0.01	8.52	0.30	0.18
Total TPY	5.5	5.5	90.7	79.9	20.7	7.8

*Worst case scenario, based on firing ASTM D396 #2 fuel oil.

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, MMC 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

MMC previously submitted an ambient air quality analysis for air emission license A-731-71-H-A (dated July 24, 2004) 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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-431-71-K-R 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:
- 1. 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
 - 2. 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
 - 3. 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) **CUP Boilers #1, #2 and #3**

A. Fuel

1. Total fuel use for CUP Boilers #1, #2 and #3 shall not exceed 3,214,286 gallons per year of #2 fuel oil, or 450,000,000 standard cubic feet of natural gas, or 450,000 MMBtu per year in any combination of the two, based on a 12-month rolling total basis.
2. Prior to January 1, 2016, the #2 fuel oil fired in the boilers shall have a maximum sulfur content of 0.4% by weight. [06-096 CMR 115, BPT]
3. Beginning January 1, 2016, MMC 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, MMC 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 (if applicable). Records of annual fuel use and fuel heat input, as applicable, shall be kept on a monthly and 12-month rolling total basis. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following when firing natural gas:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
CUP Boiler #1	PM	0.01	06-096 CMR 115, BACT (A-431-71-H-A)
CUP Boiler #2	PM	0.01	06-096 CMR 115, BACT (A-431-71-H-A)
CUP Boiler #3	PM	0.01	06-096 CMR 115, BACT (A-431-71-H-A)

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

<u>Emission Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
CUP Boiler #1	0.46	0.46	0.05	1.61	1.70	0.92
CUP Boiler #2	0.46	0.46	0.05	1.61	1.70	0.92
CUP Boiler #3	0.46	0.46	0.05	1.61	1.70	0.92

D. Visible emissions from the common stack serving the boilers, when firing natural gas, shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block averages in a continuous three (3) hour period. [06-096 CMR 101]

E. Emissions shall not exceed the following when firing #2 fuel oil:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
CUP Boiler #1	PM	0.02	06-096 CMR 115, BACT (A-431-71-H-A)
CUP Boiler #2	PM	0.02	06-096 CMR 115, BACT (A-431-71-H-A)
CUP Boiler #3	PM	0.02	06-096 CMR 115, BACT (A-431-71-H-A)

- F. Emissions shall not exceed the following when firing #2 fuel oil [06-096 CMR 115, BPT]:

<u>Emission Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
CUP Boiler #1	0.92	0.92	18.53	8.74	3.22	1.38
CUP Boiler #2	0.92	0.92	18.53	8.74	3.22	1.38
CUP Boiler #3	0.92	0.92	18.53	8.74	3.22	1.38

- G. Visible emissions from the common stack serving the boilers, when firing #2 fuel oil, shall 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 three (3) hour period. [06-096 CMR 101]
- H. MMC shall comply with all requirements of 40 CFR Part 60, Subpart Dc applicable to CUP Boilers #1, 2 and #3 including, but not limited to, the following:
1. MMC shall record and maintain records of the amounts of each fuel combusted during each day or, if applicable, monthly records with fuel certifications. [40 CFR §60.48c(g)]
 2. MMC shall submit to EPA and the Department semi-annual reports. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each 6-month period.
 3. The following address for EPA shall be used for any reports or notifications required to be copied to them:
Compliance Clerk
USEPA Region 1
5 Post Office Sq., Suite 100
Boston, MA 02109-3912

(17) **Emergency Generators**

A. Computer Room Generator, Generator #7 and Fire Pump Engine

1. The Computer Room Generator, Generator #7 and Fire Pump Engine are each limited to 500 hours per year total operation, based on a 12-month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115]
2. The fuel oil sulfur content for the Computer Room Generator, Generator #7 and the Fire Pump Engine shall be limited to 0.0015% sulfur. 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]
3. Emissions shall not exceed the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Computer Room Gen.	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Generator #7	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

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

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>SO₂</u> <u>(lb/hr)</u>	<u>NO_x</u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Computer Room Generator	0.29	0.29	0.01	10.58	2.30	0.84
Generator #7	1.38	1.38	0.02	50.95	9.72	1.20
Fire Pump Engine	0.27	0.27	0.01	5.81	1.26	0.47

5. Visible Emissions

Visible emissions from each of the generators and fire pump engine 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 three (3) hour period. [06-096 CMR 101]

6. The emergency generators and fire pump engine are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are not to be used for prime power when reliable offsite power is available; nor used to supply power to an electric grid as part of a financial arrangement with an independent system operator (ISO) or another entity.

B. CUP Generators #1 and #2

1. The CUP Generators #1 and #2 are each limited to 500 hours per year total operation, based on a 12-month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115]
2. Emissions shall not exceed the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
CUP Gen. #1	PM	0.08	06-096 CMR 115, BACT (A-431-71-H-A)
CUP Gen. #2	PM	0.024	06-096 CMR 115, BACT (A-431-71-H-A)

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

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>SO₂</u> <u>(lb/hr)</u>	<u>NO_x</u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
CUP Gen. #1	1.66	1.66	0.03	47.40	5.18	0.83
CUP Gen. #2	0.30	0.30	0.03	34.10	1.20	0.70

4. Visible emissions from each of the CUP Generators 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 three (3) hour period. [06-096 CMR 101]

5. The Emergency Generators shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:
- a. The generators shall be certified by the manufacturer as meeting the emission standards for new non-road compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]
 - b. The diesel fuel fired in the generators shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 CFR §60.4207(b) and 06-096 CMR 115]
 - c. A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §60.4209(a)]
 - d. The CUP Generators shall each be limited to 100 hours per year for maintenance and testing. Up to 50 hours per year of the 100 hours per year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another entity). 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(f) and 06-096 CMR 115]
 - e. The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MMC that are approved by the engine manufacturer. MMC may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

(18) **Annual Emission Statement**

In accordance with *Emission Statements*, 06-096 CMR 137 (as amended), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of either:

- 1) A computer program and accompanying instructions supplied by the Department; or
- 2) A written emission statement containing the information required in 06-096 CMR 137.

The emission statement must be submitted as specified by the date in 06-096 CMR 137.

Maine Medical Center
Cumberland County
Portland, Maine
A-431-71-K-R(SM)

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Departmental
Findings of Fact and Order
Air Emission License
Renewal

- (19) MMC 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 28 DAY OF January, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

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

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration 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: 09/22/2011

Date of application acceptance: 09/26/2011

Date filed with the Board of Environmental Protection:

This Order prepared by N. Lynn Cornfield, Bureau of Air Quality.



