



DEPARTMENT ORDER

**Maine Army National Guard
Penobscot County
Bangor, Maine
A-755-71-J-A (SM)**

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

FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Maine Army National Guard (MEARNG) was issued Air Emission License A-755-71-I-R/A on July 8, 2014 for the operation of emission sources associated with their facilities. Facilities include staging, service and repair accommodations for ground vehicle and rotary wing aircraft, as well as several maintenance buildings, billeting, armory buildings and a Reserve Center. These non-contiguous facilities are all located at or in the vicinity of the Bangor International Airport.

MEARNG has requested an amendment to their air license to update the list of equipment currently located at their facility and the specification data associated with the existing equipment.

The equipment addressed in this license amendment is located at various facilities in the vicinity of the Bangor International Airport in Bangor, Maine.

B. Emission Equipment

The following emission equipment is addressed in this air emission license amendment:

1. Generators

Generators

<u>Equipment</u>	<u>Max. Input Capacity (MMBtu/hr)</u>	<u>Rated Output Capacity (kW)</u>	<u>Fuel Type</u>	<u>Firing Rate</u>	<u>Date of Manuf.</u>	<u>Stack #</u>
Co-Gen Unit - Non-Emergency Generator	0.96	75	Natural Gas	930 scfh	2014	260-E

Generators (Continued)

<u>Equipment</u>	<u>Max. Input Capacity (MMBtu/hr)</u>	<u>Rated Output Capacity (kW)</u>	<u>Fuel Type</u>	<u>Firing Rate</u>	<u>Date of Manuf.</u>	<u>Stack #</u>
Emergency Generator	2.68	378	Distillate Fuel, 0.0015 % Sulfur	19.4 gph	2014	ARC-G

C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

MEARNG's current air license was processed while multiple improvements to their facility were either being planned or under construction. Some of these improvements replaced existing licensed emission equipment with smaller or more efficient models that are below minimum criteria for consideration in emission calculations per 06-096 C.M.R. ch. 115 (1)(B)(2). This amendment removes the older, previously licensed equipment from their license and captures all of the changes to the roster of equipment located at the facilities.

MEARNG installed a combined heat and power system (Co-Gen Unit) at their AASF Building 260 in 2014. The Co-Gen Unit was manufactured by AEGEN and is their model Thermo Power 75 LE. It has a maximum heat input of 0.96 MMBtu/hr, which is above the 0.5 MMBtu/hr threshold for inclusion in the air emission license. MEARNG uses the Co-Gen Unit as a non-emergency electrical generator, and because the equipment is already installed and in service, this amendment is being processed as an After-the-Fact minor modification.

MEARNG also has an emergency generator with a stated heat input value of 2.72 MMBtu/hr that is currently included in the license. This heat input value was based on design specifications that were incorporated in the existing air license prior to the actual purchase and installation of the generator. The actual heat input value of the generator that was purchased and installed is 2.68 MMBtu/hr. Additionally, the limit for carbon monoxide (CO) was miscalculated in the existing air license. This amendment corrects and updates the emergency generator's actual emission limits based on installed equipment specifications.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission" levels as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Significant Emission Levels
PM	2.4	2.6	0.2	100
PM _{2.5}	0.0	0.1	0.1	100
PM ₁₀	2.4	2.6	0.2	100
SO ₂	8.8	8.8	0.0	100
NO _x	6.6	10.8	4.2	100
CO	2.5	9.9	7.4	100
VOC	0.3	2.8	2.5	50

This modification is determined to be a minor modification and has been processed as such.

D. Definitions

Insignificant Emission Equipment – For the purposes of this license amendment, *insignificant emission equipment* means fuel burning equipment that does not meet the minimum threshold for inclusion of their emission contributions into the air license emission calculations. For the boilers at MEARNG, the threshold is a maximum heat input value of 1.0 MMBtu/hr, and for their reciprocating internal combustion engines the threshold is 0.5 MMBtu/hr of maximum heat input value.

[06-096 C.M.R. ch. 115 (1)(B)(2)]

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 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Co-Gen Unit - Non-Emergency Generator

MEARNG operates one non-emergency generator, designated as the Co-Gen Unit. This unit is a combined heat and power system which is driven by a natural gas-fired reciprocating engine. It was manufactured, installed and put into operation in 2014 and is located at the AASF building. It was not included in the current air license, so its addition to the air license is being processed as an After-The-Fact action. New equipment installed at a licensed facility requires a BACT analysis. Its engine is rated with a maximum fuel input of 930 scfh, and the generator has a maximum electrical output of 75 kW.

1. BACT Findings

- a. Nitrogen Oxides (NO_x), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC)

Emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compounds (VOC) are typically controlled through the proper operation and maintenance of the unit according to the manufacturer's emission-related instructions. Additionally, this Co-Gen Unit features an integrated three way non-selective catalyst reduction system (NSCR) designed to further reduce the emissions of NO_x from the exhaust stream.

Where the Co-Gen Unit fires on natural gas, the Department finds that the proper operation of the Co-Gen Unit in accordance with the manufacturer's instructions, the performance of the manufacturer's recommended maintenance activities at their prescribed intervals, and the proper use of the unit's integrated emission control system constitutes BACT for emissions of NO_x, CO and VOC.

- b. Particulate Matter (PM / PM₁₀ / PM_{2.5}) and Sulfur Dioxide (SO₂)

The emissions of PM / PM₁₀ / PM_{2.5} and SO₂ are inherently low from the combustion of natural gas in units that are properly maintained and operated. This is due to low ash content and the negligible sulfur content of the natural gas fuel. Additional equipment and controls to reduce PM / PM₁₀ / PM_{2.5} and SO₂ emissions below their current levels would not be economically practical given the small size of the Co-Gen Unit (0.96 MMBtu/hr). The Department finds that the firing of natural gas combined with the proper operation and maintenance of the Co-Gen Unit constitute BACT for PM / PM₁₀ / PM_{2.5} and SO₂ for this unit.

2. Emission Limits

The BACT emission limits for the Co-Gen Unit are based on the following:

PM/ PM ₁₀	- 0.05 lb/MMBtu, 06-096 C.M.R. ch. 115, BACT
PM _{2.5}	0.0194 lb/MMBtu (Condensable and Filterable), from AP-42, Table 3.2-3, dated 07/2000
SO ₂	- 0.000588 lb/MMBtu, from AP-42, Table 3.2-3, dated 07/2000
NO _x	- 1.0 g/hp hr, per 40 C.F.R. Part 60, Subpart JJJJ, Table 1 (0.67 lb/MMBtu, based on Engine Input)
CO	- 2.0 g/hp hr, per 40 C.F.R. Part 60, Subpart JJJJ, Table 1 (1.35 lb/MMBtu, based on Engine Input)
VOC	- 0.7 g/hp hr, per 40 C.F.R. Part 60, Subpart JJJJ, Table 1 (0.47 lb/MMBtu, based on Engine Input)
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the Co-Gen unit are the following:

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>PM_{2.5}</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>
Co-Gen Unit Natural Gas 0.96 MMBtu/hr	0.05	0.05	0.02	0.001	0.68	1.35	0.47

Visible emissions the Co-Gen Unit shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

3. Because the Co-Gen Unit was manufactured after July 1, 2008 and its engine is less than 500 HP, it is subject to the New Source Performance Standards (NSPS) *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE)*, 40 C.F.R. Part 60 Subpart JJJJ. [40 C.F.R. § 60.4230 (a)(4)(iii)]

By meeting the requirements of 40 C.F.R. Part 60, Subpart JJJJ, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

- a. 40 C.F.R. Part 60, Subpart JJJJ Requirements

- (1) Manufacturer Certification Requirement

The engine shall be certified by the manufacturer as meeting the emission standards for new non-road spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. These emission standards have been included in this air emission license amendment. [40 C.F.R. § 60.4233(e)]

- (2) Operation and Maintenance Requirement

The engine shall be operated and maintained according to the manufacturer's written instructions or procedures developed by MEARNG that are approved by the engine manufacturer. MEARNG may only change those settings that are permitted by the manufacturer. In addition, MEARNG shall maintain and operate the air-to-fuel ratio controller appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. [40 C.F.R. § 60.4243(b) and § 60.4243(g)]

- (3) Recordkeeping

MEARNG shall meet the requirements for maintaining and keeping records for the Co-Gen Unit. These records shall include documentation of all maintenance activities conducted, all notifications that have been submitted to comply with this subpart including corresponding documentation, and the manufacturers' certification that the Co-Gen Unit meets the emission standards found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. § 60.4245(a)]

- (4) Performance Testing

Because MEARNG purchased an engine certified by the manufacturer to comply with the applicable Subpart JJJJ emission standards, and because they keep maintenance records in accordance with Subpart JJJJ, MEARNG is not required to conduct performance testing on the Co-Gen Unit. [40 C.F.R. § 60.4243(a)(1)]

C. Emission Equipment Removed

The three boilers listed below were included in the previous air emission license, but have since been removed from service by the facility. This amendment removes this equipment from the air license. These boilers will not be addressed further in this air license.

Licensed Equipment Removed from Facility

<u>Equipment</u>	<u>Location</u>	<u>Capacity (MMBtu/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Date of Manuf.</u>	<u>Status</u>
Boiler 255-1 (original)	Band Armory	1.30	Distillate Fuel, 0.5%	1986	REMOVED FROM SERVICE
Boiler 260-1 (original)	AASF	1.14	Distillate Fuel, 0.5% Natural Gas	2002	REMOVED FROM SERVICE
Boiler 345-1	112 th Armory	1.50	Distillate Fuel, 0.5%	2009	TRANSFERRED TO CITY OF BANGOR

Removal of these three previously licensed boilers does not change the fuel limits or operating hours for the remaining licensed equipment. The remaining equipment has the capability of burning the quantity of fuel currently allowed by the existing annual fuel limit within the operating year.

The table is being shown only for document continuity and completeness purposes.

Several other pieces of insignificant emission equipment have also been taken out of service and removed from the facility since the current air license was issued. They are not listed, nor are they factored into this amendment. However their removal has been reflected in the Comprehensive Equipment List found in Section G of the Findings of Fact for this amendment.

D. Insignificant Emission Equipment Additions

MEARNG has added insignificant emission equipment to their facilities since the current air license was issued. This equipment is being shown below for purposes of completeness. They will not be addressed further in this air license.

Insignificant Emission Equipment Added to the Facility

<u>Equipment</u>	<u>Equipment Type</u>	<u>Location</u>	<u>Capacity (MMBtu/hr)</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>
255-1 (replaced original 255-1)	Boiler	Band Armory	0.40	Natural Gas	2014
255-2	Boiler	Band Armory	0.40	Natural Gas	2014
260-1 (replaced original 260-1)	Boiler	AASF	0.85	Natural Gas	2014
Hot Water Heater (replaced original HWH)	Hot Water Heater	AFRC	0.20	Liquid Propane	2015
Hot Water Heater (replaced original HWH)	Hot Water Heater	FMS #3	0.15	Natural Gas	2005
Ceiling Heater, Mechanical Room #2 (added capacity to room)	Unit Heater	ARC	0.032	Natural Gas	2014

E. Emission Equipment Corrections

The emission equipment shown below was included in the previous air emission license for completeness purposes only. The equipment's specification data listed on the application for this amendment differed from the values on the current air license. The information was reviewed by the facility, and the values below reflect their corrected findings. The data below is only being shown to provide accurate information and avoid potential questions about the equipment in the future. Insignificant equipment shown below will not be addressed further in this air license.

Emission Equipment Corrections

<u>Equipment</u>	<u>Location</u>	<u>Original Capacity (MMBtu/hr)</u>	<u>Corrected Capacity (MMBtu/hr)</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>
Ceiling Heater, Loading/Receiving	AVC	0.055	0.051	Natural Gas	2014
Ceiling Heater, Mechanical Room #1	AVC	0.055	0.051	Natural Gas	2014
Ceiling Heater #1, Mechanical Room #2	AVC	0.055	0.012	Natural Gas	2014
Ceiling Heater #2, Mechanical Room #2	AVC	-	0.032	Natural Gas	2014
Ceiling Heater, Work Bay #1	AVC	0.170	0.144	Natural Gas	2014
Ceiling Heater, Work Bay #2	AVC	0.170	0.144	Natural Gas	2014

Emission Equipment Corrections (Continued)

<u>Equipment</u>	<u>Location</u>	<u>Original Capacity (MMBtu/hr)</u>	<u>Corrected Capacity (MMBtu/hr)</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>
Emergency Generator	AVC	2.72	2.68	Distillate Fuel, 0.0015% sulfur	2014
Furnace	POL Storage	0.350	0.375	Distillate Fuel, 0.5% sulfur	2004
Rooftop Heater #1	AVC	0.225	0.240	Natural Gas	2014
Rooftop Heater #2	AVC	0.320	0.400	Natural Gas	2014
Rooftop Heater #3	AVC	0.225	0.240	Natural Gas	2014
Rooftop Heater #4	AVC	0.225	0.240	Natural Gas	2014
Rooftop Heater #5	AVC	0.225	0.240	Natural Gas	2014
Rooftop Heater, Food Service Area	AVC	0.458	0.421	Natural Gas	2014

F. Fuel Storage Tanks Corrections

MEARNG has two fuel storage tanks at their Bangor facilities which have capacities above the licensing threshold level of 10,000 gallons. The designation that MEARNG uses to identify these two tanks has changed since the current air license was issued. The table below is used only to update the air license designation for these two tanks to their present identifiers. No changes to the tanks or their specifications were made.

Fuel Storage Tanks

Present Tank Designation	Old Tank Designation	Capacity (gallons)	Material Stored	Tank Type	Tank Size (L x D) in feet	Year Installed
8 (Building 260)	9 (Building 260)	25,000	Distillate Fuel	Single wall steel with secondary containment	38.75 x 10.5	2005
11 (AFRC)	13 (AFRC)	12,000			32 x 8	1990

G. Comprehensive Equipment Lists

The tables below are being included in this amendment to provide comprehensive, updated data for all of the emission equipment located at the MEARNG facilities in Bangor, Maine. These tables are presented for informational purposes only. All equipment shown in these tables that require licensing have been accounted for in their appropriate air license sections.

Fuel Burning Equipment Requiring Air Emission Licensing						
Type	Designation	Building	Max Heat Input, MMBtu/hr	Type of Fuel	Max Firing Rate	Date of Manufacture
Boiler	260-2	AASF	4.40	Distillate fuel, 0.5%	30.5 gph	2002
Boiler	260-2	AASF	4.40	Natural Gas	4404 cfh	2002
Boiler	260-3	AASF	4.40	Distillate fuel, 0.5%	30.5 gph	2002
Boiler	260-3	AASF	4.40	Natural Gas	4404 cfh	2002
Boiler	260-4	AASF	4.40	Distillate fuel, 0.5%	30.5 gph	2002
Boiler	260-4	AASF	4.40	Natural Gas	4404 cfh	2002
Fire Pump	260-FP1	AASF	1.40	Distillate fuel, 0.0015%	10.2 gph	2002
Fire Pump	260-FP2	AASF	1.40	Distillate fuel, 0.0015%	10.2 gph	2002
Fire Pump	260-FP3	AASF	1.40	Distillate fuel, 0.0015%	10.2 gph	2002
Generator	AEGEN Co-Gen Unit	AASF	0.96	Natural Gas	930 cfh	2014
Generator	Generator DG-260	AASF	4.50	Distillate fuel, 0.0015%	34.8 gph	2002
Boiler	AFRC-1	AFRC	4.55	Distillate fuel, 0.5%	32.5 gph	1996
Boiler	AFRC-2	AFRC	4.55	Distillate fuel, 0.5%	32.5 gph	1998
Generator	Emergency Generator	Aviation Readiness Center	2.68	Distillate fuel, 0.0015%	19.4 gph	2014
Generator	Generator	FMS #3	1.38	Distillate fuel, 0.0015%	10.0 gph	2009
Fire Pump	254-1	Hanger – Cold Storage	0.56	Distillate fuel, 0.0015%	4.0 gph	2011
Fire Pump	254-2	Hanger – Cold Storage	0.56	Distillate fuel, 0.0015%	4.0 gph	2011
Generator	Generator	Regional Training Institute	7.89	Distillate fuel, 0.0015%	57.2 gph	2010

Fuel Storage Tanks Requiring Air Emission Licensing							
Type	Designation	Building	Capacity (gallons)	Material Stored	Tank Type	Tank Size, ft (length x diameter)	Date of Manuf
Fuel Storage Tank	8	260	25,000	Distillate Fuel	Single wall with secondary containment	38.75 x 10.5	2005
Fuel Storage Tank	11	AFRC	12,000	Distillate Fuel		32 x 8	1990

Parts Washers Requiring Air Emission Licensing				
Type	Designation	Building	Capacity (gallons)	Solvent
Parts Washer	Sink #1	FMS #3	27.5	Naphtha
Parts Washer	Sink #2	AASF	34	Naphtha

Fuel Burning Equipment with Capacities Below License Thresholds						
Type	Designation	Building	Max Heat Input, MMBtu/hr	Type of Fuel	Max Firing Rate	Date of Manuf
Boiler	260-1 (new)	AASF	0.85	Natural Gas	810 cfh	2014
Hot Water Heater	Hot Water Heater	AFRC	0.20	Liquid Propane	80 cfh	2015
Hot Water Heater	Hot Water Heater	AFRC	0.20	Liquid Propane	80 cfh	2015
Heater	Ceiling Heater, Loading / Receiving	Aviation Readiness Center	0.051	Natural Gas	49 cfh	2014
Heater	Ceiling Heater, Mechanical Room #1	Aviation Readiness Center	0.051	Natural Gas	49 cfh	2014
Heater	Ceiling Heater, Mechanical Room#2	Aviation Readiness Center	0.012	Natural Gas	11.5 cfh	2014
Heater	Ceiling Heater, Mechanical Room#2	Aviation Readiness Center	0.032	Natural Gas	30.5 cfh	2014
Heater	Ceiling Heater, Work Bay #1	Aviation Readiness Center	0.144	Natural Gas	137 cfh	2014

Fuel Burning Equipment with Capacities Below License Thresholds						
Type	Designation	Building	Max Heat Input, MMBtu/hr	Type of Fuel	Max Firing Rate	Date of Manuf
Heater	Ceiling Heater, Work Bay #2	Aviation Readiness Center	0.144	Natural Gas	137 cfh	2014
Heater	Rooftop Heater #1	Aviation Readiness Center	0.240	Natural Gas	229 cfh	2014
Heater	Rooftop Heater #2	Aviation Readiness Center	0.40	Natural Gas	381 cfh	2014
Heater	Rooftop Heater #3	Aviation Readiness Center	0.240	Natural Gas	229 cfh	2014
Heater	Rooftop Heater #4	Aviation Readiness Center	0.240	Natural Gas	229 cfh	2014
Heater	Rooftop Heater #5	Aviation Readiness Center	0.240	Natural Gas	229 cfh	2014
Heater	Rooftop Heater, Food Service Area	Aviation Readiness Center	0.421	Natural Gas	401 cfh	2014
Boiler	255-2	Band Armory	0.40	Natural Gas	381 cfh	2014
Generator	20 kW Lighting Generator	Bangor Training Site Range	0.294	Liquid Propane	117 cfh	2012
Boiler	250-1	FMS #3	0.75	Natural Gas	715 cfh	2010
Boiler	250-2	FMS #3	0.75	Natural Gas	715 cfh	2010
Dehumidifier	Dehumidifier	FMS #3	0.153	Liquid Propane	61 cfh	2008
Hot Water Heater	Hot Water Heater	FMS #3	0.15	Natural Gas	143 cfh	2010
Furnace	Forced Hot Air Furnace #1	Hobby Shop (Building 251)	0.25	Liquid Propane	99 cfh	2016
Furnace	Furnace	POL Storage	0.375	Distillate fuel, 0.5%	5.5 gph	2004
Boiler	Backup Boiler	Regional Training Institute	0.40	Natural Gas	381 cfh	2013
Boiler	RTI-1 (1 of 4)	Regional Training Institute	0.140	Natural Gas	134 cfh	2012
Boiler	RTI-1 (2 of 4)	Regional Training Institute	0.140	Natural Gas	134 cfh	2012

Fuel Burning Equipment with Capacities Below License Thresholds						
Type	Designation	Building	Max Heat Input, MMBtu/hr	Type of Fuel	Max Firing Rate	Date of Manuf
Boiler	RTI-1 (3 of 4)	Regional Training Institute	0.140	Natural Gas	134 cfh	2012
Boiler	RTI-1 (4 of 4)	Regional Training Institute	0.140	Natural Gas	134 cfh	2012
Boiler	RTI-2	Regional Training Institute	0.150	Natural Gas	143 cfh	2012
Boiler	RTI-3	Regional Training Institute	0.150	Natural Gas	143 cfh	2012
Boiler	RTI-4	Regional Training Institute	0.150	Natural Gas	143 cfh	2012
Heater	Ceiling Heater	Regional Training Institute	0.12	Liquid Propane	48 cfh	2013
Heater	Ceiling Heater	Regional Training Institute	0.12	Liquid Propane	48 cfh	2013
Hot Water Heater	Hot Water Heater (Billet East)	Regional Training Institute	0.15	Natural Gas	143 cfh	2012
Hot Water Heater	Hot Water Heater (Billet North)	Regional Training Institute	0.20	Natural Gas	191 cfh	2012
Hot Water Heater	Hot Water Heater (Billet West)	Regional Training Institute	0.15	Natural Gas	143 cfh	2012
Hot Water Heater	Hot Water Heater (Dining Hall)	Regional Training Institute	0.250	Natural Gas	239 cfh	2012
Hot Water Heater	Hot Water Heater #1	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014
Hot Water Heater	Hot Water Heater #2	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014
Hot Water Heater	Hot Water Heater #3	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014
Hot Water Heater	Hot Water Heater #4	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014

Fuel Burning Equipment with Capacities Below License Thresholds						
Type	Designation	Building	Max Heat Input, MMBtu/hr	Type of Fuel	Max Firing Rate	Date of Manuf
Hot Water Heater	Hot Water Heater #5	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014
Hot Water Heater	Hot Water Heater #6	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014
Hot Water Heater	Hot Water Heater #7	Aviation Readiness Center	0.199	Natural Gas	190 cfh	2014
Generator	7 kW Lighting Generator	Aviation Readiness Center	0.103	Liquid Propane	41 cfh	2011
Boiler	255-1 (new)	Band Armory	0.40	Natural Gas	381 cfh	2014

Storage Tanks with Capacities Below Air Emission License Thresholds									
Type	Designation	Building	Capacity (gallons)	Material Stored	Tank Type	Tank Dimensions, ft			
						L	W	H	DIA
Tank	1	250	10,000	JP-8	Dual Wall Fiberglas			8	16
Tank	2	250	8,000	JP-8	Dual Wall Fiberglas			5	5
Tank	3	250	350	Used Motor Oil	Single Wall Steel with containment	3.5	5	4	
Tank	4	250	309	Diesel	Dual Wall Steel	9.3	3.1	1.5	
Tank	5	260	990	Diesel	(3) 330 gallon pump tanks with single wall containment	6			2.83
Tank	6	260	350	#2 Fuel Oil	Day Tank – Single Wall with containment	5.5	0.94	4.16	
Tank	7	260 POL	275	#2 Fuel Oil	Dual Wall Steel	3.7	2.25	4.75	
Tank	9	260 Gen	1,700	Diesel	Dual Wall Steel			6	5
Tank	12	AFRC	5,000	JP-8	Single Wall Steel with secondary containment			9.5	8
Tank	15	RTI Gen	700	Diesel	Dual Wall Steel	22	7.6	1.8	
Tank	16	254	600	Diesel	(2) 300 gallon tanks, Dual Wall Steel				
Tank	17	260	350	Used Oil	Single Wall Steel with secondary containment	3.5	5	4	
Tank	18	ARC	1,000	Diesel	Dual Wall Steel				

H. Annual Emissions

1. Total Annual Emissions

MEARNG shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on a combined fuel limit on the boilers of 35,000 MMBtu per year, no runtime or fuel limits on the Co-Gen Unit, and 100 hours per year for the emergency generators and fire pump engines.

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

	PM	PM₁₀	PM_{2.5}	SO₂	NO_x	CO	VOC
Boilers	2.1	2.1	0.0	8.8	2.5	1.5	0.1
Emergency Generators	0.2	0.2	0.0	0.001	3.5	0.8	0.1
Fire Pump Engines	0.1	0.1	0.0	0.001	1.2	0.3	0.1
Co-Gen Unit	0.2	0.2	0.1	0.0	3.6	7.3	2.5
Total TPY	2.6	2.6	0.1	8.8	10.8	9.9	2.8

III. AMBIENT AIR QUALITY ANALYSIS

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

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

The total licensed annual emissions for the facility 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 Amendment A-755-71-J-A subject to the conditions found in Air Emission License A-755-71-I-R/A and the following conditions.

Severability: The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following replaces Specific Condition (17)B found in the Air Emission License A-755-71-I-R/A (July 18, 2014). This change only removes two boilers that are no longer in service. Emissions from boilers AFRC-1 and AFRC-2 remain unchanged.

(17) Distillate Fuel-Fired Boilers: AFRC-1 and AFRC-2

B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler AFRC-1 (4.55 MMBtu/hr) Distillate Fuel	0.55	0.55	2.28	0.65	0.16	0.01
Boiler AFRC-2 (4.55 MMBtu/hr) Distillate Fuel	0.55	0.55	2.28	0.65	0.16	0.01

The following replaces Specific Condition (18)B found in Air Emission License A-755-71-I-R/A (July 18, 2014). This change only removes one boiler that is no longer in service. Emissions from boilers 260-2, 260-3 and 260-4 remain unchanged.

(18) **Dual Fuel-Fired Boilers: 260-2, 260-3 and 260-4**

B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

<u>Unit</u>	<u>Fuel</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler 260-2 (4.40 MMBtu/hr)	Distillate Fuel	0.53	0.53	2.20	0.61	0.15	0.01
	Natural Gas	0.06	0.06	negligible	0.11	0.09	0.006
Boiler 260-3 (4.40 MMBtu/hr)	Distillate Fuel	0.53	0.53	2.20	0.61	0.15	0.01
	Natural Gas	0.06	0.06	negligible	0.11	0.09	0.006
Boiler 260-4 (4.40 MMBtu/hr)	Distillate Fuel	0.53	0.53	2.20	0.61	0.15	0.01
	Natural Gas	0.06	0.06	negligible	0.11	0.09	0.006

The following replaces Specific Conditions (20)D and (20)E found in Air Emission License A-755-71-I-R/A (July 18, 2014). (20)D is changed to reflect the corrected maximum heat input capacity and emission rates for the Emergency Generator. (20)E is changed to add the visible emissions limit for the Co-Gen Unit and to update the visible emissions limit for the other engines.

(20) **Generators and Engines**

D. Emissions shall not exceed the following:

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>	<u>NMHC + NOX (lb/hr)</u>
Generator (FMS #3) 1.38 MMBtu/hr, distillate fuel	0.43	0.43	0.002	6.09	1.31	0.50	--
Generator DG-260 4.50 MMBtu/hr, distillate fuel	0.57	0.57	0.01	14.40	3.83	0.41	--
Generator (RTI) 7.89 MMBtu/hr, distillate fuel	1.81	1.81	0.01	25.25	6.71	0.71	--
Emergency Generator (ARC) 2.68 MMBtu/hr, distillate fuel	0.83	0.83	0.004	11.82	2.55	0.96	--

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>	<u>NMHC + NOX (lb/hr)</u>
Co-Gen Unit 0.96 MMBtu/hr, Natural Gas	0.05	0.05	0.001	0.83	1.66	0.58	--
Fire Pump 254-1 0.56 MMBtu/hr, distillate fuel	0.10	0.10	0.001	2.47	0.63	0.20	1.33
Fire Pump 254-2 0.56 MMBtu/hr, distillate fuel	0.10	0.10	0.001	2.47	0.63	0.20	1.33
Fire Pump 260-FP1 1.40 MMBtu/hr, distillate fuel	0.43	0.43	0.002	6.17	1.33	0.50	--
Fire Pump 260-FP2 1.40 MMBtu/hr, distillate fuel	0.43	0.43	0.002	6.17	1.33	0.50	--
Fire Pump 260-FP3 1.40 MMBtu/hr, distillate fuel	0.43	0.43	0.002	6.17	1.33	0.50	--

E. Visible emissions from each of the distillate fuel-fired emergency generators and engines shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

Visible emissions from the natural gas-fired Co-Gen Unit shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

The following is a new addition to Specific Condition (20), to be included with those found in Air Emission License A-755-71-I-R/A (July 18, 2014).

(20) **Generators and Engines**

G. Subpart JJJJ Requirements for the Co-Gen Unit

(1) Manufacturer's Certification Requirement

The Co-Gen Unit shall be certified by the manufacturer as meeting the emission standards for new non-road spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. § 60.4233(e)]

(2) Operation and Maintenance Requirement

The Co-Gen Unit shall be operated and maintained according to the manufacturer's written instructions or procedures developed by MEARNG that are approved by the engine manufacturer. MEARNG may only change those settings that are permitted by the manufacturer. In addition, MEARNG shall maintain and operate the air-to-fuel ratio controller appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. [40 C.F.R. § 60.4243(b) and § 60.4243(g)]

(3) Recordkeeping

MEARNG shall meet the requirements for maintaining and keeping records for the Co-Gen Unit. These records shall include documentation of all inspection and maintenance activities conducted, all notifications that have been submitted to comply with this subpart including its corresponding documentation, and the manufacturer's certification that the Co-Gen Unit meets the emission standards found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. § 60.4245(a)]

DONE AND DATED IN AUGUSTA, MAINE THIS 3 DAY OF March, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cove for
PAUL MERCER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-755-71-I-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: August 19, 2015

Date of application acceptance: August 19, 2015

Date filed with the Board of Environmental Protection:

This Order prepared by Patric J. Sherman, Bureau of Air Quality.

