STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

HC Bangor, LLC **Penobscot County** **Bangor, Maine** **A-1006-71-F-R/A**	**Departmental** **Findings of Fact and Order** **Air Emission License** **Renewal and After-the-Fact** **Amendment**

FINDINGS OF FACT

After review of the air emission license renewal and 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

HC Bangor, LLC (HC Bangor) has applied to renew their Air Emission License for the operation of emission sources associated with their casino and hotel. HC Bangor has requested an after-the-fact amendment to their license in order to add three air handling units and remove their older air handling units from the license. The equipment addressed in this license is located at 500 Main Street, Bangor, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Make-up Air Units, Boilers, Hot Water Heaters, and Air Handling Units

Unit ID	Type of Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Manuf.	Date of Install.
MAU-1	Make-up Air Unit	1.05	1,019	Natural gas	2006	2007
MAU-2	Make-up Air Unit	1.05	1,019	Natural gas	2006	2007
MAU-3	Make-up Air Unit	1.05	1,019	Natural gas	2006	2007
B-1	Boiler	3.00	2,913	Natural gas	2017	2017
B-2	Boiler	3.00	2,913	Natural gas	2017	2017
B-5	Boiler	2.00	1,942	Natural gas	2006	2007
HWH-1	Water Heater	1.70	1,650	Natural gas	2005	2007
HWH-2	Water Heater	1.70	1,650	Natural gas	2005	2007
HWH-3	Water Heater	1.50	1,456	Natural gas	2005	2007
HWH-4	Water Heater	1.50	1,456	Natural gas	2005	2007
AHU-1*	Air Handling Unit	2.80	2,718	Natural gas	2023	2023

Unit ID	Type of Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Manuf.	Date of Install.
AHU-2*	Air Handling Unit	2.80	2,718	Natural gas	2023	2023
AHU-3*	Air Handling Unit	2.80	2,718	Natural gas	2023	2023
*ERU-1***	*Air Handling Unit*	*2.63*	*2,553*	*Natural gas*	*2007*	*2008*
*ERU-2***	*Air Handling Unit*	*2.63*	*2,553*	*Natural gas*	*2007*	*2008*
*ERU-3***	*Air Handling Unit*	*2.63*	*2,553*	*Natural gas*	*2007*	*2008*

* New to the license
** Removed from the license

Stationary Engine

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW)	Fuel Type	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.
Generator #1	19.0	2,000	Distillate fuel	138.9	2007	2008

HC Bangor may operate small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More information regarding requirements for small stationary engines is available on the Department's website at the link below.
http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf

Additionally, HC Bangor may operate portable engines used for maintenance or emergency-only purposes. These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

Portable Snow Melter

Unit ID	Type of Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (gal/hr)	Fuel Type	Date of Manuf.	Date of Install.
Snow Melter Engine	Engine	0.5	3.9	Distillate fuel	2005	2010
Snow Melt Burner	Process Heater	4.5	32.1	Distillate fuel	2005	2010

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

Portable or Non-Road Engine means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

An engine is not a non-road (portable) engine if it remains or will remain at a location for more than 12 consecutive months or for a shorter period of time if sited at a seasonal source. A seasonal source is a source that remains in a single location for two years or more and which operates for fewer than 12 months in a calendar year. If an engine operates at a seasonal source for one entire season, the engine does not meet the criteria of a non-road (portable) engine and is subject to applicable stationary engine requirements.

Records or *Logs* mean either hardcopy or electronic records.

D. Application Classification

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

HC Bangor has applied to renew currently licensed emission units as well as amend their license as addressed in Section I(A) above.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emissions" 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	1.4	1.4	0	100
PM_{10}	1.4	1.4	0	100
$PM_{2.5}$	0	1.4	1.4[1]	100
SO_2	0	0	0	100
NO_x	8.2	8.1	-0.1	100
CO	2.8	2.8	0	100
VOC	0.4	0.4	0	100

Therefore, this license is considered to be both a renewal and a minor modification and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules C.M.R. ch. 115.

E. Facility Classification

With the operating hours restriction on Generator #1, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because HC Bangor is subject to license restrictions that keep facility emissions below major source thresholds for NO_x; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

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

[1] $PM_{2.5}$ emissions were not previously addressed in the license, which is why the net change is 1.4 tpy.

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. Make-up Air Units, Boilers, Hot Water Heaters, Air Handling Units

HC Bangor operates many natural gas-fired units for facility heating and hot water needs. MAU-1, MAU-2, and MAU-3 are Make-up Air units, each rated at 1.05 MMBtu/hr, manufactured in 2006, and installed in 2007. B-1 and B-2 are boilers, each rated at 3.00 MMBtu/hr and manufactured and installed in 2017. B-5 is a boiler rated at 2.00 MMBtu/hr, manufactured in 2006, and installed in 2007. HWH-1 and HWH-2 are water heaters, each rated at 1.70 MMBtu/hr, manufactured in 2005, and installed in 2007. HWH-3 and HWH-4 are hot water heaters, each rated at 1.50 MMBtu/hr, manufactured in 2005, and installed in 2007. AHU-1, AHU-2, and AHU-3 are air handling units, each rated at 2.80 MMBtu/hr and manufactured and installed in 2023. The make-up air units and air handling units are located on the facility's roof, and each unit exhausts through its side. The boilers and the hot water heaters exhaust through the wall of the facility. Each unit has its own exhaust pipe.

1. BPT Findings (MAU-1, MAU-2, MAU-3, B-1, B-2, B-5, HWH-1, HWH-2, HWH-3, and HWH-4)

   The BPT emission limits for the natural gas-fired units were based on the following:

   Natural Gas

$PM/PM_{10}/PM_{2.5}$	–	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 101

   The BPT emission limits for the natural gas-fired units are the following:

Unit	Pollutant	lb/MMBtu
B-1	PM	0.05
B-2	PM	0.05

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
MAU-1	0.05	0.05	0.05	0.001	0.10	0.09	0.01
MAU-2	0.05	0.05	0.05	0.001	0.10	0.09	0.01
MAU-3	0.05	0.05	0.05	0.001	0.10	0.09	0.01
B-1	0.15	0.15	0.15	0.002	0.29	0.24	0.02
B-2	0.15	0.15	0.15	0.002	0.29	0.24	0.02
B-5	0.10	0.10	0.10	0.001	0.19	0.16	0.01
HWH-1	0.09	0.09	0.09	0.001	0.17	0.14	0.01
HWH-2	0.09	0.09	0.09	0.001	0.17	0.14	0.01
HWH-3	0.08	0.08	0.08	0.001	0.15	0.12	0.01
HWH-4	0.08	0.08	0.08	0.001	0.15	0.12	0.01

2. BACT Findings

Following is a BACT analysis for control of emissions from AHU-1, AHU-2, and AHU-3

a. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)
HC Bangor has proposed to burn only low-ash content fuels (natural gas) in the air handling units. Additional add-on pollution controls are not economically feasible.

BACT for PM/PM_{10}/$PM_{2.5}$ emissions from AHU-1, AHU-2, and AHU-3 is the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)
HC Bangor has proposed to fire only natural gas. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible.

BACT for SO_2 emissions from AHU-1, AHU-2, and AHU-3 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)
HC Bangor considered several control strategies for the control of NO_x including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, flue gas recirculation (FGR), and low-NO_x burners.

Both SCR and SNCR are technically feasible control technologies for minimizing NO_x. Both methods include injection of a NO_x reducing agent, typically ammonia or urea, into the boiler combustion gases, where the reagent reacts with NO_x to form nitrogen and water. Each technology is effective within a specific temperature range, 500 – 1,200 °F for SCR and 1,400 – 1,600 °F for SNCR. However, both SCR and SNCR have the negative environmental impact of emissions of unreacted

ammonia. In addition, due to the initial capital cost and the annual operating costs, these systems are typically only considered cost effective for units larger than AHU-1, AHU-2, and AHU-3.

Water/steam injection and FGR can attain similar NO_x reduction efficiencies through lowering burner flame temperature and thereby reducing thermal NO_x formation. However, both control strategies reduce the boiler's fuel efficiency.

Low-NO_x burners control mixing of fuel and air in a pattern that keeps flame temperature lower and dissipates the heat quickly. The reduced flame temperature lowers the thermal NO_x emissions; the resulting lower oxygen levels in the flame also reduces fuel NO_x emissions.

Given that the total expected maximum NO_x emissions from operating AHU-1, AHU-2, and AHU-3 at 8,760 hr/yr each is less than 4 tpy, additional add-on pollution controls are not economically feasible.

BACT for NO_x emissions from AHU-1, AHU-2, and AHU-3 is the emission limits listed in the tables below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

HC Bangor considered several control strategies for the control of CO and VOC including oxidation catalysts, and thermal oxidizers.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the boiler in question. These controls were determined to be economically infeasible.

BACT for CO and VOC emissions from AHU-1, AHU-2, and AHU-3 is the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for AHU-1, AHU-2, and AHU-3 were based on the following:

Natural Gas

PM	–	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
$PM_{10}/PM_{2.5}$	–	7.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98

The BACT emission limits for AHU-1, AHU-2, and AHU-3 are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
AHU-1	0.14	0.14	0.14	0.002	0.27	0..23	0.01
AHU-2	0.14	0.14	0.14	0.002	0.27	0..23	0.01
AHU-3	0.14	0.14	0.14	0.002	0.27	0..23	0.01

3. Visible Emissions

   Visible emissions from each of the make-up air units, boilers, hot water heaters, and air handling units shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(3)]

4. Fuel Limits

   Combined total fuel use for the make-up air units, boilers, hot water heaters, and air handling units shall not exceed 30 MMscf/yr of natural gas, based on a calendar year total basis.

5. Periodic Monitoring

   Periodic monitoring for the make-up air units, boilers, hot water heaters, and air handling units shall include recordkeeping to document fuel use both on a monthly and calendar year total basis.

6. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

   Due to their size, B-1, B-2 and B-5 are not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. The make-up air units, hot water heaters, and air handling units are not steam generating units, and are therefore not subject to 40 C.F.R. Part 60, Subpart Dc. [40 C.F.R. § 60.40c]

7. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJJ

   B-1, B-2, and B-5 are not subject to *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ. B-1, B-2, and B-5 are natural gas-fired boilers. Natural gas-fired boilers are included in the definition of gas-fired boilers in Subpart JJJJJJ. The make-up air units, hot water heaters, and air handling units are not

subject to the 40 C.F.R. Part 63, Subpart JJJJJJ because they fire natural gas and do not meet the definition of a boiler as defined in 40 C.F.R. § 63.11237. [40 C.F.R. §§ 63.11193, 63.11195, and 63.11237]

C. Generator #1

HC Bangor operates Generator #1, which is a non-emergency engine. Generator #1 is a generator set consisting of an engine and an electrical generator. Generator #1 has an engine rated at 19.0 MMBtu/hr which fires distillate fuel. Generator #1 was manufactured in 2007 and installed in 2008.

1. BPT Findings

The BPT emission limits for Generator #1 are based on the following:

$PM/PM_{10}/PM_{2.5}$	–	0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
SO_2	–	Combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO_x	–	3.2 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
CO	–	0.85 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
VOC	–	0.09 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96

The BPT emission limits for Generator #1 are the following:

Unit	Pollutant	lb/MMBtu
Generator #1	PM	0.12

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	2.28	2.28	2.28	0.03	60.89	16.17	1.71

2. Usage Limits and Recordkeeping

Generator #1 shall be limited to 100 hours per calendar year of operation for any reason, including startup and shutdown, testing, and both emergency and non-emergency use. Compliance shall be demonstrated by a written or electronic log of all generator operating hours. A non-resettable hour meter shall be installed and operated on the engine to track the operating hours of the engine.

HC Bangor shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated.

[06-096 C.M.R. ch. 115, BPT]

3. Visible Emissions

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(4)]

4. Chapter 169

Generator #1 was installed prior to the effective date of *Stationary Generators*, 06-096 C.M.R. ch. 169 and is therefore exempt from this rule pursuant to section 1.

5. New Source Performance Standards

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to Generator #1 since the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, 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 summary of the currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements is listed below.

a. Manufacturer Certification Requirement
The engine shall be certified by certified by the manufacturer as meeting the emissions requirements for new non road compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4204(b)] The facility provided a specification sheet in January 2009 that confirms Generator #1 is a Tier 2 engine, which meets the emissions requirements for this engine. This specification sheet is included in the Air Emission License file.

b. Ultra-Low Sulfur Fuel Requirement
The fuel fired in Generator #1 shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing distillate fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 C.F.R. § 60.4207(b)] 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. [06-096 C.M.R. ch. 115, BPT]

c. Operation and Maintenance Requirements
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by HC Bangor that are approved by the engine manufacturer. HC Bangor may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

d. Initial Notification Requirement
No initial notification is required for certified non-emergency stationary engines less than or equal to 2,237 kW (3,000 HP). [40 C.F.R. § 60.4214(a)]

D. Snow Melter

HC Bangor operates a portable Snow Melter, which has a Snow Melter Engine, a John Deere model 4024T270, and a Snow Melter Burner, a Trecan Combustion Limited model 4.5-20-04. The Snow Melter Engine is rated at 0.5 MMBtu/hr and fires distillate fuel. The Snow Melter Burner is rated at 4.5 MMBtu/hr and fires distillate fuel. The Snow Melter Engine and Burner were each manufactured in 2005 and installed in 2010.

State statute directs that, with limited exceptions, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm) pursuant to 38 M.R.S. § 603-A(2)(A)(3). Therefore, the distillate fuel purchased or otherwise obtained for use in the Snow Melter Engine and Burner shall not exceed 0.0015% by weight (15 ppm).

1. BPT Findings

The BPT emission limits for the Snow Melter Engine are based on the following:

$PM/PM_{10}/PM_{2.5}$	–	0.12 lb/MMBtu from 06-096 C.M.R. ch. 115, BPT
SO_2	–	based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight
NO_x	–	4.41 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
CO	–	0.95 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
VOC	–	0.36 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96

The BPT emission limits for the Snow Melter Burner were based on the following:

$PM/PM_{10}/PM_{2.5}$	–	0.08 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight
NO_x	–	0.300 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT from Air Emission License A-1006-71-B-M (1/27/2010)*
CO	–	5 lb/1,000 gal based on AP-42 Table 1.3-1 dated 5/10
VOC	–	0.34 lb/1,000 gal based on AP-42 Table 1.3-3 dated 5/10

* NO_x emission limits for the Snow Melter burner are based on data from similar distillate fuel-fired units of this size and age.

The BPT emission limits for the Snow Melter Engine and Burner are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Snow Melter Engine	0.06	0.06	0.06	0.001	2.21	0.48	0.18
Snow Melter Burner	0.36	0.36	0.36	0.01	1.35	0.16	0.01

2. Usage Limits and Recordkeeping

The Snow Melter shall be limited to 2,000 hours of operation per calendar year. Compliance shall be demonstrated by a written or electronic log of all operating hours. A non-resettable hour meter shall be installed and operated on the Snow Melter to keep track of the hours the Snow Melter was operated.

HC Bangor shall keep records that include maintenance conducted on the Snow Melter and the hours of operation of the Snow Melter recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated.

[06-096 C.M.R. ch. 115, BPT]

3. Visible Emissions

<u>Snow Melter Engine</u>
Visible emissions from the Snow Melter Engine shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time Facility shall either meet the normal operating visible emissions standard or the following work practice standards and alternative visible emissions standard.

a. The duration of the startup shall not exceed 30 minutes per event;
b. Visible emissions shall not exceed 50% opacity on a six-minute block average basis; and
c. HC Bangor shall keep records of the date, time, and duration of each startup.

Use of the work practice standards and alternative visible emissions standard in lieu of the normal operating standard is limited to no more than once per day.

Note: This does not limit the engine to one startup per day. It only limits the use of the alternative emission standard to once per day.

[06-096 C.M.R. ch. 101, § 4(A)(4)]

Snow Melter Burner

Visible emissions from the Snow Melter Burner shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(2)]

4. Chapter 169 (Snow Melter Engine)

The Snow Melter Engine was installed prior to the effective date of *Stationary Generators,* 06-096 C.M.R. ch. 169 and is also a portable engine and is therefore exempt from this rule pursuant to section 1.

5. New Source Performance Standards 40 C.F.R. Part 60, Subpart IIII (Snow Melter Engine)

The Snow Melter Engine is not subject to *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,* 40 C.F.R. Part 60, Subpart IIII.

The definition in 40 C.F.R. § 1068.30 states that a non-road engine is an internal combustion engine that meets certain criteria, including: "Portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform." The regulation further states at 40 C.F.R. § 1068.30 that an engine is not a non-road engine if it remains or will remain at a location for more than 12 consecutive months or for a shorter period of time if sited at a seasonal source. A seasonal source is a source that remains in a single location for two years or more and which operates for fewer than 12 months in a calendar year. If an engine operates at a seasonal source for one entire season, the engine does not meet the criteria of a non-road engine and is subject to applicable stationary engine requirements. [40 C.F.R. § 60.4200]

The Snow Melter Engine is considered a non-road engine, as opposed to a stationary engine, since the Snow Melter Engine is portable and will be moved to various sites throughout the Facility.

6. New Source Performance Standards 40 C.F.R. Part 60, Subpart Dc (Snow Melter Burner)

   Due to the size and due to the fact that the Snow Melter Burner is not a steam generating unit, the Snow Melter Burner is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

7. National Emission Standards for Hazardous Air Pollutants: 40 C.F.R. Part 63, Subpart ZZZZ (Snow Melter Engine)

   The Snow Melter Engine is not subject to *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* 40 C.F.R. Part 63, Subpart ZZZZ.

   The definition in 40 C.F.R. § 1068.30 states that a non-road engine is an internal combustion engine that meets certain criteria, including: "Portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform." The regulation further states at 40 C.F.R. § 1068.30 that an engine is not a non-road engine if it remains or will remain at a location for more than 12 consecutive months or for a shorter period of time if sited at a seasonal source. A seasonal source is a source that remains in a single location for two years or more and which operates for fewer than 12 months in a calendar year. If an engine operates at a seasonal source for one entire season, the engine does not meet the criteria of a non-road engine and is subject to applicable stationary engine requirements. [40 C.F.R. § 63.6585]

   The Snow Melter Engine is considered a non-road engine, as opposed to a stationary engine, since the Snow Melter Engine is portable and will be moved to various sites throughout the facility.

8. National Emission Standards for Hazardous Air Pollutants 40 C.F.R. Part 63, Subpart JJJJJJ (Snow Melter Burner)

   The Snow Melter Burner does not heat water. It does not meet the definition of a "boiler" and therefore is not subject to *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources,* 40 C.F.R. Part 63 Subpart JJJJJJ.

E. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee and establishing the facility's potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- Firing 30 million scf/yr of natural gas;
- Operating Generator #1 for 100 hr/yr for non-emergency operation; and
- Operating the Portable Snow Melter 2,000 hr/yr.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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

	PM	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_x**	**CO**	**VOC**
Natural Gas Use	0.8	0.8	0.8	--	1.5	1.3	0.1
Generator #1	0.1	0.1	0.1	--	3.0	0.8	0.1
Snow Melt Burner	0.4	0.4	0.4	--	1.4	0.2	--
Snow Melter Engine	0.1	0.1	0.1	--	2.2	0.5	0.2
Total TPY	1.4	1.4	1.4	--	8.1	2.8	0.4

Pollutant	**Tons/year**
Single HAP	7.9
Total HAP	19.9

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
$PM_{2.5}$	15
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.

This determination is based on information provided by the applicant regarding the operation of the proposed and licensed emission units. If the Department determines that any parameter (e.g., stack size, configuration, flow rate, emission rates, nearby structures, etc.) deviates from what was included in the application, the Department may require HC Bangor to submit additional information and may require an ambient air quality impact analysis at that time.

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-1006-71-F-R/A subject to the following conditions.

Severability. The invalidity or unenforceability of any provision of this License or part thereof 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. § 347-C).

(2) The licensee shall acquire a new or amended air emission license prior to beginning actual construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115] Payment of the annual air emission license fee for HC Bangor is due by the end of May of each year. [38 M.R.S. § 353-A(3)]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. 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 C.F.R. 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 C.M.R. ch. 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 the written test report by the Department, or another alternative timeframe approved by the Department, 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 C.F.R. Part 60 or other method approved or required by the Department; and

B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and

representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 C.M.R. ch. 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 license requirement. [06-096 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]

(16) The licensee 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. § 605). [06-096 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(17) **Make-up Air Units, Boilers, Hot Water Heaters, and Air Handling Units (MAU-1, MAU-2, MAU-3, B-1, B-2, B-5, HWH-1, HWH-2, HWH-3, HWH-4, AHU-1, AHU-2, and AHU-3)**

A. Fuel

1. The combined total fuel use for the make-up air units, boilers, hot water heaters, and air handling units shall not exceed 30 MMscf/yr of natural gas, on a calendar year total basis. [06-096 C.M.R. ch. 115, BPT]
2. Compliance shall be demonstrated by fuel records showing the quantity and type of fuel purchase. Records of annual fuel use shall be kept on a monthly and calendar year basis. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
B-1	PM	0.05	06-096 C.M.R. ch. 115, BPT
B-2	PM	0.05	06-096 C.M.R. ch. 115, BPT

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT and BACT for AHU-1, AHU-2, and AHU-3]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
MAU-1	0.05	0.05	0.05	0.001	0.10	0.09	0.01
MAU-2	0.05	0.05	0.05	0.001	0.10	0.09	0.01
MAU-3	0.05	0.05	0.05	0.001	0.10	0.09	0.01
B-1	0.15	0.15	0.15	0.002	0.29	0.24	0.02
B-2	0.15	0.15	0.15	0.002	0.29	0.24	0.02
B-5	0.10	0.10	0.10	0.001	0.19	0.16	0.01
HWH-1	0.09	0.09	0.09	0.001	0.17	0.14	0.01
HWH-2	0.09	0.09	0.09	0.001	0.17	0.14	0.01
HWH-3	0.08	0.08	0.08	0.001	0.15	0.12	0.01
HWH-4	0.08	0.08	0.08	0.001	0.15	0.12	0.01
AHU-1	0.14	0.14	0.14	0.002	0.27	0..23	0.01
AHU-2	0.14	0.14	0.14	0.002	0.27	0..23	0.01
AHU-3	0.14	0.14	0.14	0.002	0.27	0..23	0.01

D. Visible emissions from each make-up air unit, boiler, hot water heater, and air handling unit shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(3)]

(18) **Generator #1**

A. Generator #1 is licensed to fire distillate fuel. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	2.28	2.28	2.28	0.03	60.89	16.17	1.71

D. Usage Limits and Recordkeeping

Generator #1 shall be limited to 100 hours per calendar year of operation for any reason, including startup and shutdown, testing, and both emergency and non-emergency use. Compliance shall be demonstrated by a written or electronic log of all generator operating hours. A non-resettable hour meter shall be installed and operated on the engine to keep track of the hours the engine was operated.

HC Bangor shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated.

[06-096 C.M.R. ch. 115, BPT]

E. Visible Emissions

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(4)]

F. Generator #1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following: [incorporated under 06-096 C.M.R. ch. 115, BPT]

1. Manufacturer Certification Requirement
The engine shall be certified by certified by the manufacturer as meeting the emissions requirements for new non road compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4204(b)] The facility provided a specification sheet in January 2009 that confirms Generator #1 is a Tier 2 engine, which meets

the emissions requirements for this engine. This specification sheet is included in the Air Emission License file.

2. Ultra-Low Sulfur Fuel
The fuel fired in Generator #1 shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing distillate fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 C.F.R. § 60.4207(b)] 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. [06-096 C.M.R. ch. 115, BPT]

3. Operation and Maintenance Requirements
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by HC Bangor that are approved by the engine manufacturer. HC Bangor may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(19) **Snow Melter (Snow Melter Engine and Burner)**

A. The fuel sulfur content of the distillate fuel fired in the Snow Melter Engine and Burner shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the fuel in the tank on-site. [06-096 C.M.R. ch. 115, BPT]

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Snow Melter Engine	0.06	0.06	0.06	0.001	2.21	0.48	0.18
Snow Melter Burner	0.36	0.36	0.36	0.01	1.35	0.16	0.01

C. Usage Limits and Recordkeeping

The Snow Melter shall be limited to 2,000 hours of operation per calendar year. Compliance shall be demonstrated by a written or electronic log of all operating hours. A non-resettable hour meter shall be installed and operated on the Snow Melter to keep track of the hours the Snow Melter was operated.

HC Bangor shall keep records that include maintenance conducted on the Snow Melter and the hours of operation of the Snow Melter recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated.

[06-096 C.M.R. ch. 115, BPT]

D. Visible Emissions

Snow Melter Engine

Visible emissions from the Snow Melter Engine shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time Facility shall either meet the normal operating visible emissions standard or the following work practice standards and alternative visible emissions standard.

a. The duration of the startup shall not exceed 30 minutes per event;
b. Visible emissions shall not exceed 50% opacity on a six-minute block average basis; and
c. HC Bangor shall keep records of the date, time, and duration of each startup.

Use of the work practice standards and alternative visible emissions standard in lieu of the normal operating standard is limited to no more than once per day.

Note: This does not limit the engine to one startup per day. It only limits the use of the alternative emission standard to once per day.

[06-096 C.M.R. ch. 101, § 4(A)(4)]

Snow Melter Burner

Visible emissions from the Snow Melter Burner shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 4(A)(2)]

(20) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, HC Bangor may be required to submit additional information. Upon written request from the Department, HC Bangor shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.
[06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 26th DAY OF NOVEMBER, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for _____
MELANIE LOYZIM, COMMISSIONER

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

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: February 2, 2024
Date of application acceptance: February 2, 2024

This Order prepared by Kendra Nash, Bureau of Air Quality.