



DEPARTMENT ORDER

**University of Maine System – Machias
Washington County
Machias, Maine
A-463-71-N-N/A**

**Departmental
Findings of Fact and Order
Air Emission License
After-the-Fact Renewal/Amendment**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

The Air Emission License for the University of Maine System at Machias (UMM) expired on November 10, 2024. UMM applied after that date to renew their license for the operation of emission sources associated with their education facility.

The equipment addressed in this license is located throughout the campus. The facility's mailing address is 116 O'Brien Avenue, Machias, Maine.

UMM has requested an after-the-fact amendment to their license in order to address the following:

1. Replace several boilers;
2. Reclassify Reynolds Center Boilers as insignificant activities based on sizes;
3. Adjust the emission factors for the Emergency Generator – Dorward Hall based on more accurate approximations of propane generators; and
4. Remove the fuel limit for the boilers.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Date of Manuf. and Install.	Stack #
Powers Hall Boiler 1 ^A	1.71	12.2 gal/hr	Distillate Fuel	2015	POW-1
Powers Hall Boiler 2 ^A	1.71	12.2 gal/hr	Distillate Fuel	2015	POW-2
Torrey Merrill Boiler 1 ^A	1.1	7.9 gal/hr	Distillate Fuel	2015	TOR-S1
Torrey Merrill Boiler 2 ^A	1.1	7.9 gal/hr	Distillate Fuel	2015	TOR-S1
Science Building Boiler 1 ^A	1.31	9.4 gal/hr	Distillate Fuel	2015	SCI-S1
Science Building Boiler 2 ^A	1.31	9.4 gal/hr	Distillate Fuel	2015	SCI-S1
Kimball Hall Boiler ^B	2.1	14.9 gal/hr	Distillate Fuel	1954	KIM-S1
Powers Hall Boiler 1 ^B	2.14	15.3 gal/hr	Distillate Fuel	1973	POW-S1
Powers Hall Boiler 2 ^B	2.14	15.3 gal/hr	Distillate Fuel	1973	POW-S1
Torrey Merrill Boiler Series (2 in series) ^B	2.2 total (1.1 each)	15.8 gal/hr total (7.9 gal/hr each)	Distillate Fuel	2008	TOR-S1
Dorward Hall Boiler Series (3 in series) ^B	3.15 total (1.05 each)	22.5 gal/hr total (7.5 gal/hr each)	Distillate Fuel	1998	DOR-S1
Science Building Boiler 1 ^B	1.31	9.4 gal/hr	Distillate Fuel	1997	SCI-S1
Science Building Boiler 2 ^B	1.31	9.4 gal/hr	Distillate Fuel	1997	SCI-S1

^A New to license

^B Removed from license

Insignificant Activity Boilers

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Date of Manuf. and Install.	Stack #
Reynolds Center Boiler 1 ^A	0.42	3 gal/hr	Distillate Fuel	2011	RC-S1
Reynolds Center Boiler 2 ^A	0.42	3 gal/hr	Distillate Fuel	2011	RC-S1
Reynolds Center Boiler 3 ^A	0.42	3 gal/hr	Distillate Fuel	2011	RC-S1
Reynolds Center Boiler 4 ^A	0.42	3 gal/hr	Distillate Fuel	2011	RC-S1
Dorward Hall Boiler 1 ^{AB}	0.9	9.65 gal/hr	Distillate Fuel	2015	DOR-S1
Dorward Hall Boiler 2 ^{AB}	0.9	9.65 gal/hr	Distillate Fuel	2015	DOR-S1
Dorward Hall Boiler 3 ^{AB}	0.9	9.65 gal/hr	Distillate Fuel	2015	DOR-S1
Sennett Hall Boiler 1 ^{AB}	0.9	6.45 gal/hr	Distillate Fuel	2015	SEN-S1
Sennett Hall Boiler 2 ^{AB}	0.9	6.45 gal/hr	Distillate Fuel	2015	SEN-S1

^A Insignificant activity as defined by 06-096 C.M.R. ch. 115, Appendix B, § (B)(2). Included for completeness only.

^B New to license

UMM may also have several small pieces of equipment not listed in the table above and previously excluded from the license. These are considered insignificant emissions units because they are each rated below 1.0 MMBtu/hr, the heat input capacity at or above which would require their inclusion in the license; therefore, these small pieces of equipment are not addressed further in this license.

Stationary Engines

Equipment	Max. Input Capacity	Rated Output Capacity	Fuel Type	Firing Rate	Date of Manuf.	Date of Install.
Emergency Generator - Dorward Hall	0.89 MMBtu/hr	80 kW	Propane	9.69 gal/hr	2003	2004

UMM 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](http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf); <http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf>.

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.

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.

The previous air emission license for UMM expired on November 10, 2024. A complete application was not submitted prior to the expiration date; therefore, UMM is considered to be an existing source applying for an after-the-fact renewal, as well as amending 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 Emissions Levels
PM	2.5	2.9	+0.4	100
PM ₁₀	2.5	2.9	+0.4	100
PM _{2.5}	-	2.9	-	100
SO ₂	10.5	0.1	-10.4	100
NO _x	7.4	5.2	-2.2	100
CO	0.8	1.4	+0.6	100
VOC	0.1	0.1	-	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

The facility is licensed as follows:

- As a natural minor source of criteria pollutants, because no license restrictions are necessary to keep facility emissions below major source thresholds for criteria pollutants; 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 an after-the-fact renewal requires an analysis similar to a Best Available Control Technology (BACT) analysis pursuant to 06-096 C.M.R. ch. 115.

BPT for new sources and modifications requires a demonstration that emissions are receiving 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.

B. Boilers

UMM operates numerous distillate fuel-fired boilers on campus for heating purposes. These units include the following:

Equipment	Max. Input Capacity	Date of Manufacture and Installation
Powers Hall Boiler 1	1.71 MMBtu/hr	2015
Powers Hall Boiler 2	1.71 MMBtu/hr	2015
Torrey Merrill Boiler 1	1.1 MMBtu/hr	2015
Torrey Merrill Boiler 2	1.1 MMBtu/hr	2015
Science Building Boiler 1	1.31 MMBtu/hr	2015
Science Building Boiler 2	1.31 MMBtu/hr	2015

1. BACT Findings

The following is a BACT analysis for control of emissions from Powers Hall Boilers 1 and 2, Torrey Merrill Boilers 1 and 2, and Science Building Boilers 1 and 2.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

UMM has proposed to fire only distillate fuel in the boilers. Additional add-on pollution controls are not economically feasible for boilers of this size.

BACT for PM/PM₁₀/PM_{2.5} emissions from the boilers listed above is the emission limits listed in the tables below.

b. Sulfur Dioxide (SO₂)

UMM has proposed to fire only distillate fuel with sulfur content not to exceed 0.0015% by weight. The use of this fuel results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible.

BACT for SO₂ emissions from the boilers listed above is the use of ultra-low-sulfur distillate fuel and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

UMM considered several control strategies for the control of NO_x including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, and flue gas recirculation (FGR).

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 the boilers listed above.

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.

BACT for NO_x emissions from the boilers listed above is the use of good combustion methods, following manufacturer's operating instructions, and the emission limits listed in the tables below.

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

UMM 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 the boilers listed above is following the manufacturer's operating instructions and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for the boilers listed above were based on the following:

Distillate Fuel

PM/PM ₁₀ /PM _{2.5}	–	0.08 lb/MMBtu, 06-096 C.M.R. ch. 115, BACT
SO ₂	–	based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight
NO _x	–	20 lb/1,000 gal based on AP-42 Table 1.3-1 dated 5/10
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
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the boilers listed above 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)
Powers Hall Boiler 1	0.14	0.14	0.14	-	0.24	0.06	-
Powers Hall Boiler 2	0.14	0.14	0.14	-	0.24	0.06	-
Torrey Merrill Boiler 1	0.09	0.09	0.09	-	0.16	0.04	-
Torrey Merrill Boiler 2	0.09	0.09	0.09	-	0.16	0.04	-
Science Building Boiler 1	0.10	0.10	0.10	-	0.19	0.05	-
Science Building Boiler 2	0.10	0.10	0.10	-	0.19	0.05	-

2. Visible Emissions

Visible emissions from each of the boilers listed above shall not exceed 10% opacity on a six-minute block average basis.

3. Periodic Monitoring

Periodic monitoring for the boilers listed above shall include the type of fuel used and sulfur content of the fuel.

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

Due to the sizes of the boilers listed above, they 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. [40 C.F.R. § 60.40c]

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

The Powers Hall Boilers 1 and 2, Torrey Merrill Boilers 1 and 2, and Science Building Boilers 1 and 2 are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ. Hot water heaters, as defined in this subpart and including hot water boilers (i.e., those not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour, are not subject to the requirements of this subpart. [40 C.F.R. § 63.11195] Although the Torrey Merrill Boilers 1 and 2 and the Science Building Boilers 1 and 2 each are rated at less than 1.6 MMBtu/hr, they produce steam and therefore are not considered exempt in the “hot water heater” category under Subpart JJJJJ. The units are considered new oil-fired boilers rated less than 10 MMBtu/hr. [40 C.F.R. §§ 63.11193 and 63.11195]

Applicable federal 40 C.F.R. Part 63, Subpart JJJJJ requirements include the following. Additional rule information can be found on [EPA's website; https://www.epa.gov/stationary-sources-air-pollution/compliance-industrial-commercial-and-institutional-area-source](https://www.epa.gov/stationary-sources-air-pollution/compliance-industrial-commercial-and-institutional-area-source).

a. Work Practice Standards

(1) Boiler Tune-Up Program

- (i) A boiler tune-up program shall be implemented. [40 C.F.R. § 63.11223]
- (ii) The Powers Hall Boilers 1 and 2, Torrey Merrill Boilers 1 and 2, and Science Building Boilers 1 and 2 are considered new oil-fired boilers, and UMM shall conduct tune-ups on these boilers at least once every five years with no more than 61 months between tune-ups except that the boilers are not required to startup for the sole purpose of conducting a tune-up. [40 C.F.R. § 63.11223(a) and Table 2]
- (iii) 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 for up to 72 months from the previous inspection for oil-fired boilers less than or equal to 5 MMBtu/hour. [40 C.F.R. § 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 C.F.R. § 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. Delay of the inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection for oil-fired boilers less than or equal to 5 MMBtu/hour. [40 C.F.R. § 63.11223(b)(3)]
 4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]
 5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 C.F.R. § 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 30 days of start-up. [40 C.F.R. § 63.11223(b)(7)]

(iv) Tune-Up Report: A tune-up report shall be maintained onsite and, submitted to the Department and/or EPA upon request. The report shall contain the following information:

1. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
2. A description of any corrective actions taken as part of the tune-up of the boiler; and
3. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit. [40 C.F.R. § 63.11223(b)(6)]

(2) Compliance Report

For every five-year compliance period, UMM shall prepare a compliance report by March 1st of the following year to document the information below for the five-year period. The report shall be maintained by the source and submitted to the Department and/or to the EPA upon request. The report must include the items contained in §§ 63.11225(b)(1) and (2), including the following: [40 C.F.R. § 63.11225(b)]

- (i) Company name and address;
- (ii) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (iii) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- (iv) The following certifications, as applicable:
 1. "This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
 2. "No secondary materials that are solid waste were combusted in any affected unit."
 3. "This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a

boiler of similar design if manufacturer's recommended procedures are not available."

b. Recordkeeping

- (1) Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJ including the following [40 C.F.R. § 63.11225(c)]:
 - (i) Copies of notifications and reports with supporting compliance documentation;
 - (ii) 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;
 - (iii) Records of the occurrence and duration of each malfunction of each applicable boiler; and
 - (iv) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.
- (2) Records shall be in a form suitable and readily available for expeditious review. Each record must be kept for 5 years following the date of each recorded action. Each record must be kept on-site or be accessible from a central location by computer or other means that instantly provides access at the site for at least 2 years after the date of each recorded action. The records may be maintained off-site for the remaining 3 years. [40 C.F.R. § 63.11225(d)] Note: Standard Condition (8) of this license requires all records be retained for six years; therefore, the five-year record retention requirement of Subpart JJJJJ is satisfied by compliance with the more stringent six-year requirement.

C. Emergency Generator – Dorward Hall

UMM operates one emergency generator at Dorward Hall. The emergency generator is a generator set consisting of an engine and an electrical generator. The emergency generator has an engine rated at 0.89 MMBtu/hr, which fires propane at a rate of 9.7 gal/hr. The emergency generator was manufactured in 2003.

1. BACT Findings

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

UMM has proposed to fire only propane, a low ash fuel, in Emergency Generator – Dorward Hall. Additional add-on pollution controls are not economically feasible for an engine of this size.

BACT for PM/PM₁₀/PM_{2.5} emissions from Emergency Generator – Dorward Hall is the emission limits listed in the tables below.

b. Sulfur Dioxide (SO₂)

UMM has proposed to fire only propane, with an intrinsically low sulfur content. The use of this fuel results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible.

BACT for SO₂ emissions from Emergency Generator – Dorward Hall is the use of propane and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

UMM considered several control strategies for the control of NO_x including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), and using an engine certified under 40 C.F.R. Part 60, Subpart JJJJ.

Both SCR and SNCR are not economically feasible for an emergency engine of this size.

Since Emergency Generator – Dorward Hall is an existing unit, replacement for a unit certified under 40 C.F.R. Part 60, Subpart JJJJ would not be economically feasible.

BACT for NO_x emissions from Emergency Generator – Dorward Hall is the use of good combustion methods, following manufacturer’s operating instructions, and the emission limits listed in the tables below.

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

UMM 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 and duration of anticipated use of Emergency Generator – Dorward Hall. These controls were determined to be economically infeasible.

BACT for CO and VOC emissions from Emergency Generator – Dorward Hall is following the manufacturer’s operating instructions and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for Emergency Generator – Dorward Hall was based on the following:

The BACT emission limits for the generators are based on the following (with AP-42 using rich burn, <90% load values):

- PM/PM₁₀/PM_{2.5} – 0.0194 lb/MMBtu from AP-42 Table 3.2-3, dated 10/24
- SO₂ – 0.000588 lb/MMBtu from AP-42 Table 3.2-3, dated 10/24
- NO_x – 2.27 lb/MMBtu from AP-42 Table 3.2-3, dated 10/24
- CO – 3.51 lb/MMBtu from AP-42 Table 3.2-3, dated 10/24
- VOC – 0.03 lb/MMBtu from AP-42 Table 3.2-3, dated 10/24
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Emergency Generator – Dorward Hall 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)
Emergency Generator – Dorward Hall	0.02	0.02	0.02	-	2.01	3.11	0.03

Visible emissions from Emergency Generator – Dorward Hall shall not exceed 10% opacity on a six-minute block average basis.

This emergency generator shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. There is no limit on emergency operation. The emergency generator shall be equipped with a non-resettable hour-meter to record operating time. To demonstrate compliance with the operating hours limit, UMM shall keep records of the total hours of operation and the hours of emergency operation for the unit.

Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity.

2. Chapter 169

Emergency Generator – Dorward Hall 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.

3. New Source Performance Standards (NSPS)

Due to the date of manufacture of Emergency Generator – Dorward Hall, the engine is not 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 since the unit was manufactured prior to January 1, 2009. [40 C.F.R. § 60.4230]

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

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ is not applicable to Emergency Generator – Dorward Hall. The unit is considered an existing, emergency stationary reciprocating internal combustion engine at an area HAP source. However, it is considered exempt from the requirements of 40 C.F.R. Part 63, Subpart ZZZZ since it is categorized as an institutional emergency engine and it does not operate or is not contractually obligated to be available in a demand response program, during a period of deviation from standard voltage or frequency, or for supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 C.F.R. § 63.6640(f)(4)(ii).

Operation of any emergency engine in a demand response program, during a period of deviation from standard voltage or frequency, or for supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 C.F.R. § 63.6640(f)(4)(ii), would cause the engine to be subject to 40 C.F.R. Part 63, Subpart ZZZZ and require compliance with all applicable requirements of this subpart.

D. Fugitive Emissions

UMM shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility's continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

UMM shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

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:

- Operating the boilers for 8,760 hours each; and
- Operating Emergency Generator – Dorward Hall for 100 hrs/yr of non-emergency operation.

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
Powers Hall Boilers 1 and 2	1.2	1.2	1.2	-	2.1	0.5	-
Torrey Merrill Boilers 1 and 2	0.8	0.8	0.8	-	1.4	0.3	-
Science Building Boilers 1 and 2	0.9	0.9	0.9	-	1.6	0.4	-
Emergency Generator – Dorward Hall	-	-	-	-	0.1	0.2	-
Total TPY	2.9	2.9	2.9	0.1 *	5.2	1.4	0.1 *

* Because the estimated emission is small but not zero, this value is rounded to the nearest tenth of a ton.

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 expected construction and 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 UMM 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-463-71-N-N/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 UMM is due by the end of August 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).

SPECIFIC CONDITIONS

(17) **Boilers**

A. Fuel

1. UMM shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 C.M.R. ch. 115, BACT]
2. Compliance shall be demonstrated by fuel records showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable). Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier, a statement from the supplier that the fuel delivered meets Maine's fuel sulfur content

standards, certificate of analysis, or testing of fuel in the tank on-site.
 [06-096 C.M.R. ch. 115, BACT]

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

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)
Powers Hall Boiler 1	0.14	0.14	0.14	-	0.24	0.06	-
Powers Hall Boiler 2	0.14	0.14	0.14	-	0.24	0.06	-
Torrey Merrill Boiler 1	0.09	0.09	0.09	-	0.16	0.04	-
Torrey Merrill Boiler 2	0.09	0.09	0.09	-	0.16	0.04	-
Science Building Boiler 1	0.10	0.10	0.10	-	0.19	0.05	-
Science Building Boiler 2	0.10	0.10	0.10	-	0.19	0.05	-

C. Visible emissions from each of the boilers listed above shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

D. UMM shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJ applicable to the Powers Hall Boilers 1 and 2, Torrey Merrill Boilers 1 and 2, and Science Building Boilers 1 and 2 including, but not limited to, the following: [incorporated under 06-096 C.M.R. ch. 115, BACT]

1. The facility shall implement a boiler tune-up program. [40 C.F.R. § 63.11223]

a. UMM shall conduct a tune-up on the Powers Hall Boilers 1 and 2, Torrey Merrill Boilers 1 and 2, and Science Building Boilers 1 and 2 at least once every five years with no more than 61 months between tune-ups except that the boiler is not required to startup for the sole purpose of conducting a tune-up. [40 C.F.R. § 63.11223(a) and Table 2]

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 for up to 72 months from the previous inspection for oil-fired boilers less than or equal to 5 MMBtu/hour. [40 C.F.R. § 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 C.F.R. § 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. Delay of the inspection until the next scheduled shutdown is permitted for up to 72 months from the

previous inspection for oil-fired boilers less than or equal to 5 MMBtu/hour.
[40 C.F.R. § 63.11223(b)(3)]

- (4) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]
- (5) Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.
[40 C.F.R. § 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 30 days of start-up. [40 C.F.R. § 63.11223(b)(7)]

c. Tune-Up Report: A tune-up report shall be maintained onsite and submitted to the Department and EPA upon request. The report shall contain the following information:

- (1) The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
- (2) A description of any corrective actions taken as part of the tune-up of the boiler; and
- (3) The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit. [40 C.F.R. § 63.11223(b)(6)]

2. Compliance Report

For every five-year compliance period, UMM shall prepare a compliance report shall be prepared by March 1st of the following year to document the information below for the five-year period. The report shall be maintained by the source and submitted to the Department and/or to the EPA upon request. The report must include the items contained in §§ 63.11225(b)(1) and (2), including the following:
[40 C.F.R. § 63.11225(b)]

- a. Company name and address;
- b. A statement of whether the source has complied with all the relevant requirements of this Subpart;
- c. A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- d. The following certifications, as applicable:

- (1) “This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart.”
- (2) “No secondary materials that are solid waste were combusted in any affected unit.”
- (3) “This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler’s time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer’s recommended procedures or procedures specified for a boiler of similar design if manufacturer’s recommended procedures are not available.”

3. Recordkeeping

- a. Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJ including the following [40 C.F.R. § 63.11225(c)]:
 - (1) Copies of notifications and reports with supporting compliance documentation;
 - (2) 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;
 - (3) Records of the occurrence and duration of each malfunction of each applicable boiler; and
 - (4) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.
- b. Records shall be in a form suitable and readily available for expeditious review. Each record must be kept for 5 years following the date of each recorded action. Each record must be kept on-site or be accessible from a central location by computer or other means that instantly provides access at the site for at least 2 years after the date of each recorded action. The records may be maintained off-site for the remaining 3 years. [40 C.F.R. § 63.11225(d)] Note: Standard Condition (8) of this license requires all records be retained for six years; therefore, the five-year record retention requirement of Subpart JJJJJ is satisfied by compliance with the more stringent six-year requirement.

(18) **Emergency Generator – Dorward Hall**

- A. Emergency Generator – Dorward Hall shall only fire propane. [06-096 C.M.R. ch. 115, BACT]
- B. Emergency Generator – Dorward Hall shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BACT]

C. UMM 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 each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason the engine was in operation during each time. UMM shall keep records of the total number of hours for emergency and non-emergency use on both a monthly and calendar year basis. [06-096 C.M.R. ch. 115, BACT]

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

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)
Emergency Generator – Doward Hall	0.02	0.02	0.02	-	2.01	3.11	0.03

E. Visible Emissions

Visible emissions from Emergency Generator – Dorward Hall shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

F. Emergency generators and/or fire pumps 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 and/or fire pumps are not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity. [06-096 C.M.R. ch. 115, BACT]

(19) **Fugitive Emissions** [06-096 C.M.R. ch. 101, § 4(C)]

A. UMM shall not cause emissions of any fugitive dust during any period of construction, reconstruction, or operation without taking reasonable precautions. Such reasonable precautions shall be included in the facility’s continuing program of best management practices for suppression of fugitive particulate matter. See 06-096 C.M.R. ch. 101, § 4(C) for a list of potential reasonable precautions.

B. UMM shall not cause or allow visible emissions within 20 feet of ground level, measured as any level of opacity and not including water vapor, beyond the legal boundary of the property on which such emissions occur. Compliance with this standard shall be determined pursuant to 40 C.F.R. Part 60, Appendix A, Method 22.

(20) **Additional Information**

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, UMM may be required to submit additional information. Upon written request from the Department, UMM 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 MAY, 2026.

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: November 22, 2024
Date of application acceptance: December 11, 2024

This Order prepared by Zac Hicks, Bureau of Air Quality.