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

DEPARTMENT ORDER

The University of Maine **Penobscot County** **Orono, Maine** **A-204-70-J-R/A**	**Departmental** **Findings of Fact and Order** **Part 70 Air Emission License** **Renewal/Amendment**

FINDINGS OF FACT

After review of the Part 70 License 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

FACILITY	University of Maine (UMaine)
LICENSE TYPE	Part 70 License Renewal Part 70 Significant License Modification and Part 70 Minor License Modification
NAICS CODES	611310
NATURE OF BUSINESS	Education Facility
FACILITY LOCATION	5765 Service Building and throughout the Orono Campus in Orono, Maine

The University of Maine (UMaine) is an educational facility consisting of various fuel burning units for the facility's steam and heating needs. Additional equipment includes emergency generators and printing facilities.

UMaine has the potential to emit more than 100 tons per year (TPY) of sulfur dioxide (SO_2), nitrogen oxides (NO_X), and carbon monoxide (CO); therefore, the source is a major source for criteria pollutants. UMaine does not have the potential to emit more than 10 TPY of a single hazardous air pollutant (HAP) or more than 25 TPY of combined HAP; therefore, the source is an area source for HAP.

B. Emission Equipment

The following emission units are addressed by this Part 70 License:

Boilers

Equipment	Max. Heat Input Capacity (MMBtu/hr)	Max. Firing Rate	Fuel Type, % sulfur	Mfr. Date	Install. Date	Stack #
Boiler #5	86.8	579 gal/hr	No. 6 Fuel Oil, 0.5% S	1958	1958	#4
Boiler #6	86.8	579 gal/hr	No. 6 Fuel Oil, 0.5% S	1961	1961	#4
Boiler #7	86.8	85,098 scf/hr	Natural Gas	1966	1966	#1
		579 gal/hr	No. 6 Fuel Oil, 0.5% S			
Boiler #8	75	73,529 scf/hr	Natural Gas	2011	Fall 2012	#1
Global Science Boiler #1	4.4	4,314 scf/hr	Natural Gas	1996	1996	N/A
Global Science Boiler #2	4.4	4,314 scf/hr	Natural Gas	1996	1996	N/A
Small Boilers and Furnaces (< 3.2 MMBtu/hr) [1]	24.4	23,687 scf/hr	Natural Gas	Prior to 2010		N/A

Notes:

[1] Denotes boilers and furnaces that were previously considered insignificant activities but no longer are due to an amendment to 06-096 Code of Maine Rules (C.M.R.) ch. 140, Appendix B (B) that reduced the size threshold. The heat input capacity and firing rate values of ten small boilers and furnaces rated at heat inputs below 3.2 MMBtu/hr are a combined total for all applicable boilers/furnaces.

- Previously licensed Boiler #3, Boiler #4, and the Service Building Boiler have been removed from service at the facility.

Emergency Generators

Equipment	Max. Heat Input Capacity (MMBtu/hr)	Max. Firing Rate	Output (kW)	Fuel Type, % sulfur	Mfr. Date	Install Date
Portable Generator #2 [CAT Model 3406C]	3.6	25.7 gal/hr	350	Distillate Fuel, 0.0015%	1999	1999
Hitchner Hall Generator	4.1	29.3 gal/hr	400	Distillate Fuel, 0.0015%	2002	2002
Aubert Hall Generator	3.2	22.9 gal/hr	300	Distillate Fuel, 0.0015%	2002	2002
Barrows Hall Generator (formerly Engineering/ Science)	3.2	22.9 gal/hr	300	Distillate Fuel, 0.0015%	2002	2002
Alfond Arena Generator	3.0	22.2 gal/hr	300	Distillate Fuel, 0.0015%	July 2011	Aug. 2011
Neville Hall Data Center Generator	8.0	57.3 gal/hr	800	Distillate Fuel, 0.0015%	2011	May 2012
Wells Commons Generator	5.0	36.2 gal/hr	500	Distillate Fuel, 0.0015%	2018	2018
Memorial Gym Generator	3.6	3,522 scf/hr	250	Natural Gas	2013	2013
York Hall Generator	0.91	370.2 scf/hr	60	Propane	2015	2016
	0.95	933.8 scf/hr	60	Natural Gas	2015	2016
Estabrooke Hall Generator	0.43	4.7 gal/hr	25	Propane	2018	2018
Small Generators (<3 MMBtu/hr) [1]	5.85	42.7 gal/hr	600	Distillate Fuel, 0.0015%	Prior to June 2006 [3]	
	2.88	2,515 scf/hr	40 [2]	Natural Gas		
	4.2	29.74 gal/hr	246.5	Propane		

Table Notes:

[1] Denotes generators/engines that were previously considered insignificant activities but no longer are due to an amendment to 06-096 C.M.R. ch. 140, Appendix B(B) that removed the size threshold. The heat input capacity and firing rate values of these thirteen small generators (< 3 MMBtu/hr) are a combined total for the generators designated as small.

[2] One of the small natural gas engines drives a fan rather than an electric generator and is not reflected in the 40 kW power output value.

[3] All small generators except for one (the Public Safety Generator) was manufactured and installed prior to June 2006.

Non-Emergency Generators

Equipment	Max. Heat Input Capacity (MMBtu/hr)	Max. Firing Rate	Output (kW)	Fuel Type, % sulfur	Mfr. Date	Install Date
Recreation Center Generator	4.6	32.7 gal/hr	400	Distillate Fuel, 0.0015%	Oct. 2006	2007
Hilltop Commons Generator	5.8	41.4 gal/hr	550	Distillate Fuel, 0.0015%	June 2007	2007
Collins Center Generator (formerly Maine Center for the Arts)	4.1	29.1 gal/hr	350	Distillate Fuel, 0.0015%	2008	2008

Process Equipment

Equipment	Production Rate	Pollution Control Equipment	Stack #
Printing Services	N/A	None	N/A

UMaine has additional insignificant activities which do not need to be listed in the emission equipment tables above. The list of insignificant activities can be found in the Part 70 license application and in Appendix B of *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140.

C. Definitions

Distillate Fuel. For the purposes of this license, *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.

Used oil. For the purposes of this license, *Used oil* refers to on-specification oil meeting the requirements of 40 C.F.R. § 279.11 and 06-096 C.M.R. ch. 860 (4)(B).

D. Application Classification

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

The application for UMaine is for the renewal of their existing Part 70 Air License and subsequent Part 70 amendments pursuant to Section 2(A) of *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140.

UMaine has also requested incorporation into the Part 70 Air License the relevant terms and conditions of the New Source Review (NSR) licenses issued to UMaine pursuant to *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115, including:

A-204-77-4-A issued July 19, 2011,
A-204-77-5-A issued October 12, 2011,
A-204-77-6-A issued June 18, 2013,
A-204-77-7-A issued August 19, 2013,
A-204-77-9-A issued February 1, 2016,
A-204-77-10-A issued March 21, 2017,
A-204-77-11-A issued May 24, 2018, and
A-204-77-12-M issued October 23, 2018.

Therefore, the license is considered to be a Part 70 License renewal with the incorporation of NSR requirements.

E. Facility Description

UMaine is an educational facility located in Orono, Maine. The facility operates various boilers for the facility's steam needs, primarily for heat and hot water. The boilers at UMaine are capable of burning various types of fuels including distillate fuel, No. 6 fuel oil, and natural gas.

The generators are located throughout the facility, and although the majority are operated as emergency generators, UMaine operates three generators as non-emergency units.

There are additional sources of emissions at UMaine such as printing facilities, gasoline storage tanks, and parts washers.

F. General Facility Requirements

UMaine is subject to the following state and federal regulations listed below, in addition to the regulations listed for specific units as described further in this license.

CITATION	REQUIREMENT TITLE
06-096 C.M.R. ch. 101	Visible Emissions Regulation
06-096 C.M.R. ch. 103	Fuel Burning Equipment Particulate Emission Standard
06-096 C.M.R. ch. 105	General Process Source Particulate Emission Standard
06-096 C.M.R. ch. 106	Low Sulfur Fuel Regulation
06-096 C.M.R. ch. 110	Ambient Air Quality Standards
06-096 C.M.R. ch. 116	Prohibited Dispersion Techniques
06-096 C.M.R. ch. 118	Gasoline Dispensing Facilities Vapor Control
06-096 C.M.R. ch. 130	Solvent Cleaners
06-096 C.M.R. ch. 137	Emission Statements
06-096 C.M.R. ch. 138	Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides
06-096 C.M.R. ch. 140	Part 70 Air Emission License Regulations
06-096 C.M.R. ch. 143	New Source Performance Standards
06-096 C.M.R. ch. 144	National Emission Standards for Hazardous Air Pollutants
40 C.F.R. Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
40 C.F.R. Part 60, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
40 C.F.R. Part 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
40 C.F.R. Part 63, Subpart ZZZZ	National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 C.F.R. Part 63, Subpart JJJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources
40 C.F.R. Part 70	State Operating Permit Programs
40 C.F.R. Part 82	Protection of Stratospheric Ozone
40 C.F.R. Part 98	Mandatory Greenhouse Gas Reporting

Note: C.M.R. = Code of Maine Regulations
C.F.R. = Code of Federal Regulations

G. Units of Measurement

The following units of measurement are used in this license:

DF	Distillate Fuel
g/BHP-hr	grams per brake horsepower-hour
g/kW-hr	grams per kilowatt-hour
gal/hr	gallons per hour
gal/yr	gallons per year
HC	hydrocarbons
kPa	kilopascal
kW	kilowatt
lb/hr	pounds per hour
lb/MMBtu	pounds per million British Thermal Units
$lb/10^3$ gal	pounds per 1,000 gallons
$lb/10^6$ scf	pounds per 1,000,000 standard cubic feet
MMBtu	million British Thermal Units
MMBtu/hr	million British Thermal Units per hour
MMscf	million standard cubic feet
NG	Natural Gas
NMHC	Non-Methane Hydrocarbons
ppm	parts per million
ppmv	parts per million by volume
scf	standard cubic feet
scf/hr	standard cubic feet per hour
tpy	tons per year

II. BEST PRACTICAL TREATMENT (BPT) AND EMISSION STANDARDS

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 as well as for those sources located in designated non-attainment areas.

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

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

B. NO_x RACT (Reasonably Available Control Technology)

Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides, 06-096 C.M.R. ch. 138 (NO_x RACT) is applicable to sources that have the potential to emit quantities of NO_x equal to or greater than 100 tons/year. NO_x RACT requirements applicable to Boilers #3, #4, #5, #6 and #7 were addressed in Amendment A-204-72-D-A (2/20/1996). Since Boilers #3 and #4 are no longer in service, NO_x RACT applies only to Boilers #5, #6 and #7. UMaine proposed an alternative RACT determination per section 06-096 C.M.R. 138(3)(I) and demonstrates that the boilers are meeting NO_x RACT by:

- Performing annual tune-ups on each boiler to maintain NO_x emissions at normal levels,
- Complying with the tune-up record keeping requirements according to 06-096 C.M.R. ch. 138(3)(L)(2),
- Complying with a NO_x emission rate of 0.5 lb/MMBtu when burning No. 6 fuel oil with nitrogen levels that are less than or equal to 0.45% by weight, or 0.55 lb/MMBtu when burning No. 6 fuel oil with nitrogen levels that exceed 0.45% by weight,
- Limiting Boilers #5, #6 and #7 to no more than 600,000 gallons of fuel oil between May 1st and September 30th, and
- Performing stack tests for NO_x to demonstrate compliance with NO_x emission limits if the combined amount of No. 6 fuel oil burned in Boilers #5, #6 and #7 exceeds 200,000 gallons from June 1st through August 31st of any given year. If the 200,000 gallon limit is exceeded, UMaine shall perform NO_x compliance testing on the boilers that burned the fuel oil by April 1st of the following year.

In the original NO_x RACT addressed in license A-204-72-D-A (2/20/1996), UMaine was initially subject to annual stack tests for NO_x, but upon a successful compliance demonstration, the facility could apply to amend the license to reduce the frequency of stack testing. License A-204-70-F-R (1/15/2009) reduced the stack testing from annually to only a year in which the combined amount of No. 6 fuel oil burned in Boilers #5, #6 and #7 exceeds 200,000 gallons from June 1st through August 31st. The allowance for the change was based on results of eleven (11) NO_x stack emission tests from Boilers #5, #6 and #7 from March of 2000 to February of 2008.

The requirements under 06-096 C.M.R. ch. 138 do not apply to Boiler #8 since the unit is considered a new unit and was not being operated prior to May 31, 1995. All other fuel burning and process equipment units located at UMaine each have the potential to emit less than 10 tons per year of NO_x and are therefore exempt from 06-096 C.M.R. ch. 138 [06-096 C.M.R. 138(1)(B)(1)].

C. Mandatory Greenhouse Gas (GHG) Reporting

Federal regulation *Mandatory Greenhouse Gas Reporting,* 40 C.F.R. Part 98, which contains GHG reporting and related monitoring and recordkeeping requirements, is

applicable to the owners/operators of any facility which falls into any one of the following three categories, per *General Provisions, Who must report?*, 40 C.F.R. § 98.2.

(a)(1) A facility that contains any source category that is listed in Table A–3 of this subpart in any calendar year starting in 2010.

(a)(2) A facility that contains any source category that is listed in Table A–4 of this subpart and that emits 25,000 metric tons CO_2e or more per year in combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories that are listed in Table A–3 and Table A–4 of this subpart.

(a)(3) A facility that in any calendar year starting in 2010 meets all three of the conditions listed in this paragraph (a)(3). For these facilities, the annual GHG report must cover emissions from stationary fuel combustion sources only.

(i) The facility does not meet the requirements of either paragraph (a)(1) or (a)(2) of this section.

(ii) The aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 MMBtu/hour or greater.

(iii) The facility emits 25,000 metric tons CO_2e or more per year in combined emissions from all stationary fuel combustion sources.

UMaine meets all three conditions listed in paragraph (a)(3), thus is subject to the regulation. The facility shall fulfill the recordkeeping and reporting requirement of 40 C.F.R. Part 98.

D. Hazardous Air Pollutants (HAP)

UMaine is considered an area source of HAP based on combustion emission factors and chemical use records.

UMaine shall have a facility wide limit of 9.9 tons per year of any one HAP based on a calendar year total and a facility wide limit of 24.9 tons per year of total HAP based on a calendar year total. The records and calculations documenting compliance with the above limits for HAP shall be based on emission factors, chemical use and HAP content information from Safety Data Sheets or manufacturer information.
[06-096 C.M.R. ch. 140, BPT]

E. Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring, 40 C.F.R. Part 64 is applicable to units at major sources if the unit has emission limits, a control device to meet the limits, and pre-control emissions greater than 100 tons/year for any pollutant. This regulation's 40 C.F.R. § 64.2(b)(1)(vi) specifies the exemption from specific CAM requirements for any emission units subject to emission limitations or standards for which a Part 70 air emission license specifies a continuous compliance determination method. Furthermore,

40 C.F.R. Part 64 § 64.2(b)(1)(i) specifies the exemption from specific CAM requirements for any emission units subject to emission limitations or standards in a NSPS or NESHAP regulation proposed by the Administrator after November 15, 1990.
[40 C.F.R. Part 64 § 64.2(b)]

Boiler #8 and the Memorial Gym Generator are the only units that currently use a pollutant specific control device at UMaine. Boiler #8 utilizes flue gas recirculation (FGR) and the Memorial Gym Generator utilizes non-selective catalytic reduction (NSCR), both for the control of NO_x emissions.

The potential pre-control emissions for Boiler #8 and the Memorial Gym Generator were calculated using both the manufacturer supplied emissions data (as is shown in this license) and the Environmental Protection Agency (EPA) AP-42 emission factors for a more conservative estimate. NO_x emissions from Boiler #8 when firing natural gas were estimated, based on the manufacturer's data, to be approximately 13 tons/year. Using AP-42 emission factors (AP-42, Table 1.4-1 for uncontrolled, small boiler <100 MMBtu/hr, dated July 1998) NO_x emissions were estimated to be 32 tons/year. NO_x emissions from the Memorial Gym Generator based on the manufacturer's data amount to approximately 0.13 tons/year and range from 36-64 tons/year based on AP-42 emission factors (AP-42, Tables 3.2-1, 3.2-2, and 3.2-3, dated July 2000). Since Boiler #8 and the Memorial Gym Generator each do not have pre-control emissions greater than 100 TPY of any pollutant, they are not subject to 40 C.F.R. Part 64.

Therefore, federal regulation 40 C.F.R. Part 64 does not apply to any unit at UMaine.

F. Facility Steam Plant Fuel Limits and Restrictions (Boilers #5, #6, #7 and #8)

1. No. 6 Fuel Oil and Used Oil Fuel Limits and Restrictions (Boilers #5, #6, and #7)

   a. No. 6 Fuel Oil Limits

      UMaine is restricted to an annual No. 6 fuel oil facility limit of 3,500,000 gallons per year, based on a 12-month rolling total. The No. 6 fuel oil shall not exceed 0.5% sulfur content, by weight.

      In addition, the combined usage of No. 6 fuel oil in Boilers #5, #6 and #7 shall be limited to 600,000 gallons during the period of May 1st through September 30th of any calendar year, based on the alternative NO_x RACT findings of 06-096 C.M.R. ch. 138.

   b. Used Oil Limits

      UMaine is restricted to a total of 1,000 gallons/year of specification used oil generated on site, based on a 12-month rolling total, in the boilers firing No. 6 fuel

oil (Boilers #5, #6, and #7). The 1,000 gallons/year of used oil shall be included as part of the 3,500,000 gallons/year No. 6 fuel oil facility limit.

The used oil shall meet the requirements of specification used oil as defined in Chapter 860 of the Department's regulations and be considered specification used oil per 40 C.F.R. § 279.11. UMaine shall have on-site a copy of the results of a representative test sample of the used oil. If operations and/or equipment changes occur which may affect the origin or type of used oil collected, then a new representative sample shall be tested and the results shall be kept on file.

c. No. 6 Fuel Oil Firing Rate Limits

Due to modeling issues with SO_2 and a nearby source, Boilers #5, #6, and #7 shall be restricted to an average No. 6 fuel oil firing rate of 721 gal/hr over any 1-hour period from May 1st through September 30th and an average No. 6 fuel oil firing rate of 981.3 gal/hr over any 1-hour period from October 1st through April 30th. The actual No. 6 fuel oil firing rate at any given moment, as expressed in gallons per hour, may exceed the above values, as long as the total amount of No. 6 fuel oil burned in any given one-hour period does not exceed the values. [A-204-70-A-I (11/6/2000)]

UMaine shall maintain records of the total amount of No. 6 fuel oil supplied to Boilers #5, #6, and #7 through operation of a single flow meter on the common supply line to demonstrate compliance with the above restrictions. In situations where the fuel meter output accuracy is affected, including but not limited to situations such as oil circulation prior to start-up and the use of a back-up fuel supply system, compliance with the hourly firing rate limits shall be demonstrated through the use of hourly fuel oil readings on the individual boilers, or through steam production data, or other means.
[A-204-70-F-R (1/15/2009)]

2. NO_x Emission Testing

NO_x emission testing for the boilers will be performed if the combined amount of No. 6 fuel oil burned in Boiler #5, #6, and #7 exceeds 200,000 gallons from June 1 through August 31 of any given year. If the requirement is triggered, UMaine shall perform NO_x compliance testing on the boilers that burned the No. 6 fuel oil by April 1st of the following year.
[A-204-70-F-R (1/15/2009)]

G. Boilers #5 and #6

Boilers #5 and #6 were manufactured by Babcock and Wilcox in 1958 and 1961 respectively. Boiler #5 and #6 are each licensed and designed with a heat input capacity of

86.8 MMBtu/hr and combust No. 6 fuel oil with a maximum sulfur content of 0.5%, by weight, as defined by ASTM D396 standards. The boilers may fire small amount of used oil including lube and bearing oils from the steam plant machinery and a mixture of used No. 6 fuel oil/distillate fuel from the parts washers; the used oil fired is contributes toward the 1,000 gallons of used oil UMaine may fire. Boiler #5 and #6 are operated to provide steam for facility heat, hot water, cooling, and electricity needs.

Emissions from Boilers #5 and #6 exit through Stack #4, which has an inside diameter of 5 feet and above ground level (AGL) height of 150 feet.

1. NO_x RACT

   In addition to the emission rates and performance testing requirements discussed in 5. and 6. of this section, Boilers #5 and #6 are determined to be meeting NO_x RACT by performing annual tune-ups on each boiler to maintain NO_x emissions at normal level while complying with the tune-up recordkeeping requirements according to 06-096 C.M.R. ch. 138(3)(L)(2). Moreover, Boilers #5, #6, and #7 are limited to a combined fuel use of no more than 600,000 gallons of fuel oil between May 1st and September 30th.
   [A-204-72-D-A (2/20/1996)]

   Please note, the annual tune-ups required by UMaine's Alternative NO_x RACT Order, may also fulfill the tune-up requirements found in 40 C.F.R. Part 63, Subpart JJJJJJ on the applicable year so long as the tune-ups are performed according to the specifications in 40 C.F.R. § 63.1123(b).

2. New Source Performance Standards (NSPS)

   Due to either the date of installation and/or the heat input capacity, Boilers #5 and #6 are not subject to the following NSPS:

   a. 40 C.F.R. Part 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators,* which applies to fossil fuel fired steam generators with a heat input capacity of 250 MMBtu/hour or more for which construction is commenced after August 17, 1971;

   b. 40 C.F.R. Part 60, Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units,* which applies to electric utility steam generating units with a heat input capacity of 250 MMBtu/hour or more for which construction is commenced after September 18, 1978;

   c. 40 C.F.R. Part 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*, which applies to steam generating units for which construction, modification, or reconstruction is

commenced after June 19, 1984, and which have a heat input capacity from fuels combusted in the steam generating unit of greater than 100 MMBtu/hr;

d. 40 C.F.R. Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, which applies to steam generating units with a heat input capacity between 10 MMBtu/hour and 100 MMBtu/hour and constructed after June 9, 1989.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Boilers #5 and #6 are 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. An overview of the requirements of the federal regulation are discussed in Section (II)(L), titled '40 C.F.R. Part 63, Subpart JJJJJJ'.

4. Control Equipment

Boilers #5 and #6 are equipped with oxygen trim systems to maintain an optimum air-to-fuel ratio in the boilers combustion zone, thereby allowing the boilers to operate more efficiently and minimizing CO emissions.

5. Emission Limits and Streamlining

a. For Boilers #5 and #6, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM	0.20 lb/MMBtu	06-096 C.M.R. ch. 103, Section 2(A)(1)	0.10 lb/MMBtu *
	0.10 lb/MMBtu (0.5% S #6 fuel oil)	A-204-77-10-A (3/21/2017)	
	8.68 lb/hr (0.5% S #6 fuel oil)	A-204-77-10-A (3/21/2017)	8.68 lb/hr
PM_{10}	0.10 lb/MMBtu (0.5% S #6 fuel oil)	A-204-77-10-A (3/21/2017)	0.10 lb/MMBtu
	8.68 lb/hr (0.5% S #6 fuel oil)	A-204-77-10-A (3/21/2017)	8.68 lb/hr
SO_2	2% S limit, by weight	06-096 C.M.R. ch. 106, Section 3(A)(1)(a)	0.5% sulfur content limit, by weight *
	0.5% S limit, by weight	A-204-77-10-A (3/21/2017)	
	45.14 lb/hr	A-204-77-10-A (3/21/2017)	45.14 lb/hr

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
	(0.5% S #6 fuel oil)		
NO_X	0.50 lb/MMBtu (≤0.45% N fuel oil)	A-204-72-B-R (10/4/1995)	0.50 lb/MMBtu (≤0.45% N fuel oil)
	0.55 lb/MMBtu (>0.45% N fuel oil)	A-204-72-B-R (10/4/1995)	0.55 lb/MMBtu (>0.45% N fuel oil)
	43.4 lb/hr (≤0.45% N fuel oil)	A-204-70-F-R (1/15/2009)	43.4 lb/hr (≤0.45% N fuel oil)
	47.7 lb/hr (>0.45% N fuel oil)	A-204-70-F-R (1/15/2009)	47.7 lb/hr (>0.45% N fuel oil)
CO	52.1 lb/hr	A-204-70-F-R (1/15/2009)	52.1 lb/hr
VOC	8.7 lb/hr	[A-204-70-F-R (1/15/2009)	8.7 lb/hr

Table Notes: * streamlining requested; %S = percent fuel sulfur; %N =percent nitrogen content

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
Visible Emissions	For Firing No. 6 Fuel Oil: 30% opacity on a 6-min block average basis, except for no more than two 6-min block averages in a 3-hr period.	06-096 C.M.R. ch. 101, Section 2(B)(1)(a)(i)	30% opacity on a 6-minute block average basis *
	For Combined Stack Emissions prior to January 1, 2020: 30% opacity on a 6-min block average basis, except for no more than three 6-min block averages in a 3-hr period.	06-096 C.M.R. ch. 101, Section 2(D)(1)	
	For Combined Stack Emissions effective January 1, 2020 and thereafter: 30% opacity on a 6-min block average basis.	06-096 C.M.R. ch. 101, Section 3(D)(1)	
	30% opacity on a 6-min block average basis.	06-096 C.M.R. ch 140, BPT	

Table Notes: * streamlining requested

b. Visible Emissions
Visible emissions from Stack #4, through which Boilers #5 and #6 exhaust, shall not exceed 30% opacity on a six (6) minute block average basis, except during the startup of one or both boilers, during which time UMaine may elect to comply with the following work practice standards in lieu of this visible emission limit:

(1) UMaine shall record the date, time, and duration of each startup for which UMaine elects to comply with these work practice standards.
(2) UMaine shall operate the boilers in a manner consistent with safety and good air pollution practices for minimizing emissions.
(3) The duration of each startup that is subject to these work practice standards shall not exceed one hour.
[06-096 C.M.R. ch. 140, BPT]

c. UMaine shall conduct monthly visible emission determinations from stack #4 to demonstrate compliance with the opacity limit as follows:
(1) UMaine shall use the methods set forth in 40 CFR Part 60, Appendix A, Method 9 for visible emissions and shall record the opacity levels in 15 second intervals for at least 18 consecutive minutes.
(2) If any of the three 6-minute block averages observed during the first 18-minute period are above 30% opacity, then the observation period shall be extended to 3 hours.
(3) The personnel performing the observations shall hold current Method 9 visible emission observer certifications.
(4) UMaine shall keep records of the monthly observations for six years.
(5) If in any calendar month only one boiler (either Boiler #5 or Boiler #6) is operated for five consecutive days or less then no visible emissions reading is required for stack #4 for that month. UMaine shall maintain records documenting operating time for Boilers #5 and #6.
[A-204-70-G-A (1/31/2012)]

6. Emission Limit Compliance Methods

Compliance with the emission limits associated with Boilers #5 & #6 shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Applicable Emission Limits	Compliance Method	Frequency
PM	lb/MMBtu lb/hr	40 C.F.R. Part 60, App. A, Method 5	As requested
PM_{10}	lb/MMBtu lb/hr	40 C.F.R. Part 60, App. A, Method 5 or EPA Test Method 201 or 201A	As requested
SO_2	lb/hr	40 C.F.R. Part 60, App. A, Method 6	As requested
NO_X	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 7	As noted in Findings of Facts, Section F 1. d.

Pollutant	Applicable Emission Limits	Compliance Method	Frequency
	lb/hr		
CO	lb/hr	40 C.F.R. Part 60, App. A, Method 10	As requested
VOC	lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
Visible Emissions	Opacity	40 C.F.R. Part 60, App. A, Method 9	Monthly

7. Periodic Monitoring

UMaine shall monitor and record operational values for Boilers #5 and #6 as indicated in the following table whenever the equipment is operating.

Monitored Value	Units	Monitoring Tool/Method	Frequency
Combined No. 6 fuel oil firing rate for Boilers 5, 6 and 7	gal/hr	Fuel flow meter	Hourly
No. 6 fuel oil use	Gallons	Recordkeeping	Monthly (per boiler) and 12-month rolling total (Boilers 5, 6 and 7 combined)
No. 6 fuel oil sulfur content	Percent, by weight	Fuel oil analysis receipts from supplier	*As supplier's fuel analysis change
No. 6 fuel oil nitrogen content	Percent, by weight	Fuel oil analysis receipts from supplier	*As supplier's fuel analysis changes
Used oil use	Gallons	Recordkeeping	Monthly

* UMaine receives a notification when a sulfur or nitrogen content fuel analysis is performed on the supplier's tank.

8. Parameter Monitors

There are no Parameter Monitors required for Boilers #5 and #6.

9. CEMS and COMS

There are no required continuous emission monitoring systems (CEMS) or continuous opacity monitoring systems (COMS) required for Boilers #5 and #6.

H. Boiler #7

Boiler #7 is operated to provide steam for facility heat, hot water, cooling, and electricity generation needs. The boiler was manufactured in 1966 by Babcock and Wilcox and is licensed at a heat input capacity of 86.8 MMBtu/hr. Originally, Boiler #7 was licensed to fire only No. 6 fuel oil; however, the facility became licensed to fire natural gas in amendment A-204-70-C-A (1/11/2002). The boiler shall combust No. 6 fuel oil with a maximum sulfur content of 0.5%, by weight, as defined by ASTM D396 standards for No. 6 fuel oil as was licensed in New Source Review (NSR) A-204-77-3-A (6/9/2011) which was amended by NSR A-204-77-10-A (NSR) (3/21/2017). The boiler may also fire small amounts of specification used oil generated onsite.

Emissions from Boiler #7, as well as Boiler #8, exhaust through Stack #1 which has an inside diameter of 10.5 feet and above ground level height of 138 feet.

1. NO_x RACT

   In addition to the emission rates and performance testing requirements as discussed below in Sections 5. and 6., Boiler #7 is determined to be meeting NO_x RACT by performing annual tune-ups to maintain NO_x emissions at normal level while complying with the tune-up recordkeeping requirements according to 06-096 C.M.R. ch. 138(3)(L)(2). In addition, Boilers #5, #6, and #7 are limited to no more than a combined 600,000 gallons of fuel oil between May 1st and September 30th. [A-204-72-D-A (issued February 20, 1996)]

   Note: The annual tune-ups required by UMaine's Alternative NO_x RACT Order, may also fulfill the tune-up requirement in 40 C.F.R. Part 63, Subpart JJJJJJ on the applicable year so long as the tune-ups are performed according to the specifications in 40 C.F.R. § 63.1123(b).

2. New Source Performance Standards (NSPS)

   Due to either the date of installation and/or the heat input capacity, Boiler #7 is not subject to the following NSPS:

   a. 40 C.F.R. Part 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators.*

   b. 40 C.F.R. Part 60, Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units.*

   c. 40 C.F.R. Part 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.*

   d. 40 C.F.R. Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.*

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Boiler #7 is 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 JJJJJJ). An overview of the requirements of the federal regulation are discussed in the Section (II)(L), titled '40 C.F.R. Part 63, Subpart JJJJJJ'.

4. Control Equipment

Boiler #7 is equipped with an oxygen trim system to maintain an optimum air-to-fuel ratio in the boilers combustion zone; thereby allowing the boiler to run more efficiently.

5. Emission Limits and Streamlining

a. For Boiler #7, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below. UMaine accepts streamlining for PM, SO_2 and visible emissions requirements for Boiler #7.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM	0.20 lb/MMBtu firing fuel oil	06-096 C.M.R. ch. 103, Section 2(A)(1)	0.10 lb/MMBtu firing fuel oil *
	0.10 lb/MMBtu firing fuel oil (0.5% S No. 6 fuel oil)	A-204-77-10-A (3/21/2017)	0.01 lb/MMBtu firing NG only
	0.01 lb/MMBtu firing NG only	A-204-70-F-R (1/15/2009)	
	8.68 lb/hr firing fuel oil (0.5% S No. 6 fuel oil)	A-204-77-10-A (3/21/2017)	8.68 lb/hr firing fuel oil
	0.87 lb/hr firing NG only	A-204-70-F-R (1/15/2009)	0.87 lb/hr firing NG only
PM_{10}	0.10 lb/MMBtu firing fuel oil (0.5% S No. 6 fuel oil)	A-204-77-10-A (3/21/2017)	0.10 lb/MMBtu firing fuel oil
	8.68 lb/hr firing fuel oil (0.5% S No. 6 fuel oil)	A-204-77-10-A (3/21/2017)	8.68 lb/hr firing fuel oil
	0.87 lb/hr firing NG only	A-204-70-F-R (1/15/2009)	0.87 lb/hr firing NG only

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
SO_2	2% S limit, by weight, firing fuel oil	06-096 C.M.R. ch. 106, Section 3(A)(1)(a)	0.5% sulfur content limit, by weight, firing fuel oil *
	0.5% S limit, by weight, firing fuel oil	A-204-77-10-A (3/21/2017)	
	45.14 lb/hr firing fuel oil (0.5% S No. 6 fuel oil)	A-204-77-10-A (3/21/2017)	45.14 lb/hr firing fuel oil
	0.52 lb/hr firing NG	A-204-77-10-A (3/21/2017)	0.52 lb/hr firing fuel NG
NO_x	0.50 lb/MMBtu firing fuel oil (≤0.45% N fuel oil)	A-204-70-B-R (10/4/1995)	0.50 lb/MMBtu firing fuel oil (≤0.45% N fuel oil)
	0.55 lb/MMBtu firing fuel oil (>0.45% N fuel oil)	A-204-70-B-R (10/4/1995)	0.55 lb/MMBtu firing fuel oil (>0.45% N fuel oil)
	0.20 lb/MMBtu firing NG	A-204-70-F-R (1/15/2009)	0.20 lb/MMBtu firing NG
	43.4 lb/hr firing fuel oil (≤0.45% N fuel oil)	A-204-70-F-R (1/15/2009)	43.4 lb/hr firing fuel oil (≤0.45% N fuel oil)
	47.7 lb/hr firing fuel oil (>0.45% N fuel oil)	A-204-70-F-R (1/15/2009)	47.7 lb/hr firing fuel oil (>0.45% N fuel oil)
	17.4 lb/hr firing NG only	A-204-70-F-R (1/15/2009)	17.4 lb/hr firing NG
CO	52.1 lb/hr firing fuel oil	A-204-70-F-R (1/15/2009)	52.1 lb/hr firing fuel oil
	13.02 lb/hr firing NG	A-204-70-F-R (1/15/2009)	13.02 lb/hr firing NG
VOC	8.7 lb/hr firing fuel oil	A-204-70-F-R (1/15/2009)	8.7 lb/hr firing fuel oil
	0.87 lb/hr firing NG	A-204-70-F-R (1/15/2009)	0.87 lb/hr firing NG

Table Notes: * streamlining requested
% S = percent fuel sulfur, by weight
% N = percent nitrogen content

Stack #1 (Boilers #7 and #8)			
Pollutant	**Applicable Emission Standards**	**Origin and Authority**	**Licensed Emission Limits**
Visible Emissions	For Firing No. 6 Fuel Oil: 30% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hr period.	06-096 C.M.R. ch. 101, Section 2(A)(1)(a)	When Boiler #7 is firing No. 6 fuel oil: 20% opacity on a 6-minute block average basis * When Boiler #7 and/or Boiler #8 are firing NG: 10% opacity on a 6-minute block average basis. *
	For Firing No. 6 Fuel Oil: 20% opacity on a 6-minute block average basis.	A-204-77-10-A (3/21/2017)	
	For Firing NG: 10% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 3-hr period.	06-096 C.M.R. ch. 101, Section 2(A)(3)	
	For Firing NG: 10% opacity on a 6-minute block average basis.	A-204-77-10-A (3/21/2017)	
	For Combined Stack Emissions until January 1, 2020; 30% opacity on a 6-minute block average basis, except for no more than three 6-minute block averages in a 3-hr period.	06-096 C.M.R. ch. 101, Section 2(D)(1)	
	For Combined Stack Emissions effective January 1, 2020 and thereafter; 30% opacity on a 6-minute block average basis	06-096 C.M.R. ch. 101, Section 3(D)(1)	

Table Notes: * streamlining requested

b. Visible Emissions

(1) Visible emissions from stack #1 when Boiler #7 and #8 are operating alone or simultaneously on natural gas, shall not exceed 10% opacity on a six (6) minute block average basis.

(2) Visible emissions from stack #1 when Boiler #7 is on No. 6 fuel oil, operating alone or with Boiler #8, shall not exceed 20% opacity on a six (6) minute block average basis.

[A-204-77-10-A (3/21/2017)]

c. UMaine shall conduct monthly visible emission determinations from stack #1 to demonstrate compliance with the opacity limit as follows:

(1) UMaine shall use the methods set forth in 40 CFR Part 60, Appendix A, Method 9 for visible emissions and shall record the opacity levels in 15 second intervals for at least 18 consecutive minutes.

(2) If any of the three 6-minute block averages observed during an 18-minute period are above 20% opacity when Boiler #7 is on No. 6 fuel oil or above 10% when Boiler #7 and/or Boiler #8 is on natural gas, then the observation period shall be extended to 3 hours.

(3) The personnel performing the observations shall hold current Method 9 visible emission observer certifications.

(4) UMaine shall keep records of the monthly observations for six years.

[A-204-70-G-A (1/31/2012)]

6. Emission Limit Compliance Methods

Compliance with the emission limits associated with Boiler #7 shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Applicable Emission Limits	Compliance Method	Frequency
PM	lb/MMBtu lb/hr	40 C.F.R. Part 60, App. A, Method 5	As requested
PM_{10}	lb/MMBtu lb/hr	40 C.F.R. Part 60, App. A, Method 5 or EPA Test Method 201 or 201A	As requested
SO_2	lb/hr	40 C.F.R. Part 60, App. A, Method 6	As requested
NO_X	lb/MMBtu lb/hr	40 C.F.R. Part 60, App. A, Method 7	As noted in Findings of Facts, Section F 1. d.
CO	lb/hr	40 C.F.R. Part 60, App. A, Method 10	As requested

Pollutant	Applicable Emission Limits	Compliance Method	Frequency
VOC	lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
Visible Emissions	Opacity	40 C.F.R. Part 60, App. A, Method 9	Monthly

7. Periodic Monitoring

UMaine shall monitor and record operational values for Boiler #7 as indicated in the following table whenever the equipment is operating.

Monitored Values	Units	Monitoring Tool/Method	Frequency
Combined No. 6 fuel oil firing rate for Boilers 5,6, and 7	gal/hr	Fuel flow meter	Hourly
No. 6 fuel oil use	Gallons	Recordkeeping	Monthly (per boiler) and 12-month rolling total (Boilers 5,6, and 7 combined)
Used oil use	Gallons	Recordkeeping	Monthly
Natural gas use	MMBtu	Recordkeeping	Monthly
No. 6 fuel oil sulfur content	Percent, by weight	Fuel oil analysis receipts from supplier	As supplier's fuel analyses changes
No. 6 fuel oil nitrogen content	Percent, by weight	Fuel oil analysis receipts from supplier	As supplier's fuel analyses changes

* UMaine receives a notification when a sulfur or nitrogen content fuel analysis is performed on the supplier's tank.

8. Parameter Monitors

There are no Parameter Monitors required for Boiler #7.

9. CEMS and COMS

There are no continuous emission monitoring systems (CEMS) or the continuous opacity monitoring systems (COMS) required for Boiler #7.

I. Boiler #8

Boiler #8 is a water-tube boiler rated at a maximum heat input of 75 MMBtu/hr licensed to fire natural gas. The boiler was manufactured in 2011 by Babcock and Wilcox and was installed in the fall of 2012 after previously licensed Boilers #3 and #4 were removed from the steam plant. The boiler operates to produce steam to be used for facility heat, hot water, cooling, and electricity generation.

Emissions for Boiler #8, as well as Boiler #7, exit through combined Stack #1 which has an inside diameter of 10.5 feet and above ground level height of 138 feet.

1. NO_x RACT

   Boiler #8 is not subject to NO_x RACT due to the boiler not being operated prior to the May 31, 1995 applicability date. Boiler #8 was first licensed in A-204-77-3-A, issued June 9, 2011 (later amended in A-204-77-10-A issued March 21, 2017), and therefore is considered a new source per 06-096 C.M.R. ch. 138 and not subject to the rule.

2. New Source Performance Standards (NSPS)

   Boiler #8 is subject to Federal Regulation 40 C.F.R. Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, which applies to steam generating units that commence construction, modification, or reconstruction after June 9, 1989, and which has a heat input capacity from fuels combusted in the steam generating unit between 10 MMBtu/hour and 100 MMBtu/hour. Due to the boiler firing natural gas, there are no applicable emission standards or monitoring and testing requirements; however, UMaine shall record and maintain records of the amount of natural gas combusted during each calendar month. [40 C.F.R. Part 60, § 60.48c(g)(2)]

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   Boiler #8 is not 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 JJJJJJ). Because Boiler #8 fires natural gas, the unit is defined as a "gas-fired boiler" and is therefore exempt from being subject to the regulation. Gaseous fuels are defined per § 63.11237 as including, but not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas. [40 C.F.R. § 63.11195(e)]

4. Control Equipment

   Boiler #8 is equipped with low-NO_x burners and Flue Gas Recirculation (FGR) for the control of NO_x emissions. The low NO_x burners consist of a set of burner components

designed to mix the fuel and combustion air in a way that limits NO_x formation, as well as limiting the formation of CO. The FGR works by recirculating a portion of the boiler's exhaust back to the burner where it is mixed with combustion air and introduced into the combustion zone. The relatively cool recirculated flue gas absorbs heat released by the burner flame, thereby reducing the peak flame temperature and reducing NO_x formation.

5. Emission Limits and Streamlining

For Boiler #8, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below. The abbreviation NG stands for natural gas. UMaine accepts streamlining for PM and visible emissions requirements for Boiler #8.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM/PM_{10}	0.08 lb/MMBtu *(PM only – not PM_{10})*	06-096 C.M.R. ch. 103, Section 2(B)(1)(b)	*0.01 lb/MMBtu
	0.01 lb/MMBtu	A-204-77-10-A (3/1/2017	
	0.75 lb/hr	A-204-77-10-A (3/21/2017)	0.75 lb/hr
SO_2	0.45 lb/hr	A-204-77-10-A (3/21/2017)	0.45 lb/hr
NO_X	0.04 lb/MMBtu	A-204-77-10-A (3/21/2017)	0.04 lb/MMBtu
	3.0 lb/hr	A-204-77-10-A (3/21/2017)	3.0 lb/hr
CO	3.0 lb/hr	A-204-77-10-A (3/21/2017	3.0 lb/hr
VOC	0.75 lb/hr	A-204-77-10-A (3/21/2017)	0.75 lb/hr

Table Notes: * Streamlining requested

The visible emission limit applicable to Boiler #8 is contained in the Findings of Fact section for Boiler #7, which contains a table identifying the visible emission limits for Stack #1 to which bother Boiler #7 and Boiler #8 exhaust.

6. Emission Limit Compliance Methods

Compliance with the emission limits associated with Boiler #8 shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

7. Periodic Monitoring

Periodic monitoring shall consist of recordkeeping which includes fuel use records. Periodic monitoring for Boiler #8 shall also include the following, whenever the equipment is operating.

Monitored Values	Units	Monitoring Tool/Method	Frequency
Natural gas use	MMBtu	Recordkeeping	Monthly

8. Parameter Monitors

There are no Parameter Monitors required for Boiler #8.

9. CEMS and COMS

There are no continuous emission monitoring systems (CEMS) or continuous opacity monitoring systems (COMS) required for Boiler #8.

J. Global Science Boilers #1 and #2

Global Science Boilers #1 and #2 are identical H.B. Smith boilers manufactured in 1996 and each having a maximum design heat input capacity of 4.4 MMBtu/hour. The boilers are operated to provide heat and hot water for the facility. Originally, the boilers fired distillate fuel, however in license amendment A-204-70-D-A (5/22/2003), the boilers switched fuels from distillate fuel to natural gas. At the time of issuance of amendment, A-204-70-D-A, the natural gas emission limits for the boilers were based on the existing distillate fuel emissions since the boilers were small and emission data was not available from the gas burner vendor. However, included in this license is an update to the natural gas fired boiler emission factors which are based on updated Environmental Protection Agency (EPA) AP-42 values, thereby resulting in emission limits that are a more accurate representation of natural gas firing.

Global Science Boilers #1 and #2 each exhaust through its own stack. Each stack has an inside diameter of 1.5 feet and above ground level height of 72 feet.

1. New Source Performance Standards (NSPS)

   Due to the heat input capacity, Global Science Boilers #1 and #2 are not subject to the following NSPS:

   a. 40 C.F.R. Part 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators*;

   b. 40 C.F.R. Part 60, Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units.*

   c. 40 C.F.R. Part 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.*

   d. 40 C.F.R. Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.*

2. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   Global Science Boilers #1 and #2 are not 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 JJJJJJ) because the boilers fire natural gas. The units are defined as "gas-fired boilers" and are therefore exempt from being subject to the regulation.
   [40 C.F.R. § 63.11195(e)]

3. Control Equipment

   There is no control equipment required or installed on Global Science Boilers #1 and #2.

4. Emission Limits and Streamlining

   For Global Science Boilers #1 and #2, a listing of potentially applicable emission standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found below for each boiler.

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
PM, PM_{10}	0.05 lb/MMBtu	06-096 C.M.R. ch. 140, BPT	0.05 lb/MMBtu
	0.22 lb/hr	06-096 C.M.R. ch. 140, BPT	0.22 lb/hr
SO_2	0.01 lb/hr	06-096 C.M.R. ch. 140, BPT based on AP-42, Table 1.4-2, 7/1998 (0.6 lb/10^6 scf)	0.01 lb/hr

Pollutant	Applicable Emission Standards	Origin and Authority	Licensed Emission Limits
NO_X	0.43 lb/hr	06-096 C.M.R. ch. 140, BPT based on AP-42, Table 1.4-1, 7/1998 (100 lb/10^6 scf)	0.43 lb/hr
CO	0.36 lb/hr	06-096 C.M.R. ch. 140, BPT based on AP-42, Table 1.4-1, 7/1998 (84 lb/10^6 scf)	0.36 lb/hr
VOC	0.02 lb/hr	06-096 C.M.R. ch. 140, BPT based on AP-42, Table 1.4-2, 7/1998 (5.5 lb/10^6 scf)	0.02 lb/hr
Visible Emissions	10% opacity on a 6-minute block average basis, except for no more than one 6-minute block averages in a 3-hour period.	06-096 C.M.R. ch. 101, Section 2(A)(3)	10% opacity on a 6-minute block average basis
	10% opacity on a 6-minute block average basis.	06-096 C.M.R. ch. 140, BPT	

5. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Global Science Boilers #1 and #2 shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Periodic Monitoring

Periodic monitoring shall consist of recordkeeping which includes fuel use records for each boiler.

Monitored Values	Units	Monitoring Tool/Method	Frequency
Natural gas use	MMBtu	Billing records from gas utility	Monthly

7. Parameter Monitors

There are no Parameter Monitors required for Global Science Boilers #1 and #2.

8. CEMS and COMS

There are no continuous emission monitoring systems (CEMS) or the continuous opacity monitoring systems (COMS) required for Global Science Boilers #1 and #2.

K. Small Boilers and Furnaces (< 3.2 MMBtu/hour)

UMaine operates numerous small boilers and furnaces for facility heat in specific buildings on the campus. Previously, according to 06-096 C.M.R. ch. 140, Appendix B(B), several boilers and furnaces were considered insignificant activities due to their sizes. However, since the issuance of UMaine's last license, 06-096 C.M.R. ch. 140 has been amended, including a reduction of the licensing insignificant size threshold from 3 MMBtu/hr to 1.7 MMBtu/hr for fuel burning equipment. The boilers and furnaces that are now considered significant activities due to the amendment to 06-096 C.M.R. ch. 140 are listed below:

Equipment Location and ID	Size	Firing Rate	Fuel Type
Service Building A – Room 161M - #1 Boiler	2.7	2,621 scf hr	Natural gas
Service Building A – Room 161M - #2 Boiler	2.7	2,621 scf hr	Natural gas
Alfond Arena – East Mechanical Room Boiler	1.7	1,650 scf hr	Natural gas
Alfond Arena – West Mechanical Room Boiler	1.7	1,650 scf hr	Natural gas
Libby Hall Boiler	2.8	2,718 scf hr	Natural gas
Keyo Building – PICS Boiler	3.1	3,010 scf/hr	Natural gas
Sawyer Environmental Research Center Boiler	2.5	2,427 scf/hr	Natural gas
Alfond Arena – East Pad Furnace/Dehumidifier	2.5	2,427 scf/hr	Natural gas
Alfond Arena – West Pad Furnace/Dehumidifier	2.5	2,427 scf/hr	Natural gas
Mahaney Dome Furnace	2.2	2,136 scf/hr	Natural gas

1. New Source Performance Standards (NSPS)

Due to the heat input capacity, the fuel burning equipment listed above are not subject to the following NSPS:

a. 40 C.F.R. Part 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators*;

b. 40 C.F.R. Part 60, Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units.*

c. 40 C.F.R. Part 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.*

d. 40 C.F.R. Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.*

2. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

In the past, the following units were operated as dual fuel units, firing distillate and natural gas. However, UMaine has decided to discontinue the firing of distillate fuel in these boilers. A fuel switch notice was submitted to the EPA on August 21, 2019 designating the units below as meeting the definition of a "gas-fired boiler". Therefore, the following boilers are not 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 JJJJJJ):

- Service Building A – Room 161M - #1 Boiler,
- Service Building A – Room 161M - #2 Boiler,
- Alfond Arena – East Mechanical Room Boiler,
- Alfond Arena – West Mechanical Room Boiler,
- Libby Hall Boiler, and
- Keyo Building – PICS Boiler

The Sawyer Environmental Research Center boiler is not subject to Subpart JJJJJJ because it has never been a dual fuel unit and is only licensed to fire natural gas therefore exempt from being subject to the regulation.
[40 C.F.R. § 63.11195(e)]

The following are not subject to 40 C.F.R. Part 63 Subpart JJJJJJ because they do not meet the definition of a boiler in this subpart:

- Alfond Arena – East Pad Furnace/Dehumidifier,
- Alfond Arena – West Pad Furnace/Dehumidifier, and
- Mahaney Dome Furnace.

3. Control Equipment

There is no control equipment required or installed on any of the boilers/furnaces listed above.

4. Emission Limits and Streamlining

For the small boilers and furnaces listed in this section, a listing of potentially applicable emission factors and standards, the origin and authority of the standards, and the applicable emission limits can be found below for each boiler/furnace, as applicable.

For Each Boiler/Furnace Firing Natural Gas			
Pollutant	**Applicable Emission Factors**	**Origin and Authority**	**Emission Factors Used to Develop Emission Limits**
PM, PM_{10}	7.6 lb/10^6 scf *	AP-42, Table 1.4-2, 7/98	7.6 lb/10^6 scf *
SO_2	0.6 lb/10^6 scf *	AP-42, Table 1.4-2, 7/98	0.6 lb/10^6 scf *
NO_X	100 lb/10^6 scf *	AP-42, Table 1.4-1, 7/98	100 lb/10^6 scf *
CO	84 lb/10^6 scf *	AP-42, Table 1.4-1, 7/98	84 lb/10^6 scf *
VOC	5.5 lb/10^6 scf *	AP-42, Table 1.4-2, 7/98	5.5 lb/10^6 scf *
Visible Emissions	10% opacity on a 6-minute block average basis, except for no more than one 6-minute block averages in a 3-hour period	06-096 C.M.R. ch. 101, Section 2(A)(3)	10% opacity on a 6-minute block average basis
	10% opacity on a 6-minute block average basis	06-096 C.M.R. ch. 140, BPT	

% S = percent fuel sulfur, by weight

* AP-42 factors are not emission limits but are used to establish the lb/hr emission limits

The Keyo Building – PICS Boiler was not previously licensed because it is rated at 2.9 MMbtu/hr when firing distillate. However, it is above 3 MMBtu/hr when firing natural gas. Therefore, it is subject to the following emission limit:

Unit	Pollutant	lb/MMBtu	Authority/Origin
Keyo Building – PICS Boiler	PM	0.05	06-096 C.M.R. ch. 140, BPT

The following table contains the established lb/hr emission rates from each natural gas fired boiler and furnace rated under 3.2 MMBtu/hr. Emissions shall not exceed the following [06-096 C.M.R. ch. 140, BPT]:

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Service Building A – Room 161M - #1 Boiler	0.02	0.02	0.01	0.26	0.22	0.01
Service Building A – Room 161M - #2 Boiler	0.02	0.02	0.01	0.26	0.22	0.01
Alfond Arena – East Mechanical Room Boiler	0.01	0.01	0.01	0.17	0.14	0.01

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Alfond Arena – West Mechanical Room Boiler	0.01	0.01	0.01	0.17	0.14	0.01
Libby Hall Boiler	0.02	0.02	0.01	0.27	0.23	0.01
Keyo Building – PICS Boiler	0.02	0.02	0.01	0.30	0.25	0.02
Sawyer Environmental Research Center Boiler	0.02	0.02	0.01	0.24	0.20	0.01
Alfond Arena – East Pad Furnace/ Dehumidifier	0.02	0.02	0.01	0.24	0.20	0.01
Alfond Arena – West Pad Furnace/ Dehumidifier	0.02	0.02	0.01	0.24	0.20	0.01
Mahaney Dome Furnace	0.02	0.02	0.01	0.21	0.18	0.01

5. Emission Limit Compliance Methods

   Compliance with the emission limits associated with the small boilers and furnaces rated less than 3 MMBtu/hr shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Periodic Monitoring

   There is no additional periodic monitoring other than what is required by Section (II)(S) titled 'Emissions Statements' which consists of annual recordkeeping of natural gas fuel use.

7. Parameter Monitors

   There are no Parameter Monitors required for the small boilers/furnaces rated less than 3 MMBtu/hr.

8. CEMS and COMS

   There are no continuous emission monitoring systems (CEMS) or continuous opacity monitoring systems (COMS) required for any of the small boilers/furnaces rated less than 3 MMBtu/hr.

L. 40 C.F.R. Part 63, Subpart JJJJJJ

The following boilers 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 JJJJJJ). The units are considered existing oil boilers.

- Boiler #5
- Boiler #6
- Boiler #7 ***(dual fired unit)***
- Navy ROTC Boiler

Depending on the operation and the fuels being fired in Boiler #7, the boiler may be exempt from the federal regulation. Boilers meeting the definition of "gas-fired boiler" are exempt from 40 C.F.R. Part 63, Subpart JJJJJJ; however, boilers which are only equipped to fire No. 6 fuel oil or distillate fuel are not. A "gas-fired boiler" is defined as any boiler that burns gaseous fuels such as natural gas not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year. [40 C.F.R. Part 63.11237]

If Boiler #7 is operated such that it meets the definition above, the boiler is exempt from 40 C.F.R. Part 63, Subpart JJJJJJ. If the boiler fires natural gas, such that it is exempt from the federal regulation, but converts back to firing No. 6 fuel oil in the future, the boiler would become subject as an existing boiler at the time it is converted back to fuel oil.

A summary of the currently applicable federal 40 C.F.R. Part 63 Subpart JJJJJJ requirements is listed below. Notification forms and additional rule information can be found on the following website: http://www.epa.gov/ttn/atw/boiler/boilerpg.html.

Compliance Dates, Notifications, and Work Practice Requirements

1. Initial Notification

   An Initial Notification was submitted to EPA on September 16, 2011.
   [40 C.F.R. Part 63.11225(a)(2)]

2. Boiler Tune-Up Program

   a. A boiler tune-up program should have been implemented to include the initial tune-up of the applicable boilers.
      [40 C.F.R. Part 63.11196(a)(1)]

   b. Each subsequent tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See charts below:

Boiler Category	Tune-Up Frequency
Boilers with a heat input capacity of <5MMBtu/hr	Every 5 years
Boilers with an oxygen trim system, which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune up, which includes Boilers #5 and #6 and Boiler #7 when not operated as a gas-fired boiler.	Every 5 years

[40 C.F.R. Part 63.11223(a) and Table 2]

Boiler Name	Boiler Category	Tune-Up Frequency
Boiler #5	Existing Oil Boiler Equipped with an oxygen trim system	Every 5 years
Boiler #6	Existing Oil Boiler Equipped with an oxygen trim system	Every 5 years
Boiler #7 ***(dual fired unit)***	Existing Oil Boiler Equipped with an oxygen trim system	*Every 5 years
Navy ROTC Boiler	With a heat input capacity of <5MMBtu/hr	Every 5 years

*Note: Not required if operated as a gas-fired boiler

c. 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, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [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, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [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)]

d. Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. 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)]

(4) After conducting the initial boiler tune-up, a Notification of Compliance Status should have been submitted to EPA no later than July 19, 2014, unless the boiler is a new boiler that is subject only to a requirement to conduct a tune-up.
[40 C.F.R. Part 63.11225(a)(4) and 40 C.F.R. Part 63.11214(b)]

UMaine submitted their Notification of Compliance Status on June 26, 2014.

e. Compliance Report

A compliance report shall be prepared by March 1st every five years which covers the previous five calendar years. 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)]

(1) Company name and address;

(2) A statement of whether the source has complied with all the relevant requirements of this Subpart;

(3) 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;

(4) The following certifications, as applicable:

(i) "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."

(ii) "No secondary materials that are solid waste were combusted in any affected unit."

(iii)"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. Energy Assessment

Boilers #5, #6, and #7 are subject to the energy assessment requirement as follows:

a. A one-time energy assessment was required to be completed by a qualified energy assessor on the applicable boilers (Boilers #5, #6, and #7).
[40 C.F.R. Part 63.11196(a)(3)]

b. A Notification of Compliance Status should have been submitted to EPA no later than July 19, 2014.
[40 C.F.R. Part 63.11225(a)(4) and 40 C.F.R. Part 63.11214(c)]

UMaine submitted their Notification of Compliance Status on June 26, 2014.

4. Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJJ including the following:
   a. Copies of notifications and reports with supporting compliance documentation;
   b. 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;
   c. Records of the occurrence and duration of each malfunction of each applicable boiler; and
   d. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.

   Records shall be in a form suitable and readily available for expeditious review.
   [40 C.F.R. § 63.11225(c)]

M. Emergency Generators and Engines [All Sizes]

UMaine operates the following emergency generators and engines:

Generator/Engine	Max. Input Capacity, MMBtu/hr	Fuel	Year of Install.	Applicable Requirements in... NSPS Subpart IIII	NSPS Subpart JJJJ	NESHAP Subpart ZZZZ
Portable Generator #2 [CAT Model 3406C)	3.6	Distillate	1999	N.A.	N.A.	N.A.
Hitchner Hall Generator	4.1	Distillate	2002	No	N.A.	No
Aubert Hall Generator	3.2	Distillate	2002	No	N.A.	No
Barrows Hall Generator	3.2	Distillate	2002	No	N.A.	No
Alfond Arena Generator	3.0	Distillate	2011	Yes	N.A.	Yes
Neville Hall Data Center Generator	8.0	Distillate	2012	Yes	N.A.	Yes
Wells Commons Generator	5.0	Distillate	2018	Yes	N.A	Yes
Memorial Gym Generator	3.6	Natural gas	2013	N.A.	Yes	Yes
York Hall Generator*	0.91	Propane	2016	N.A.	Yes	Yes
	0.95	Natural Gas		N.A		
Estabrooke Hall Generator*	0.43	Propane	2018	N.A.	Yes	Yes
Cutler Health Center *	0.11	Propane	Prior to June 12, 2006	N.A.	No	No
Murray Hall *	1.02	Propane		N.A.	No	No
Class of 1944 Hall *	0.60	Propane		N.A.	No	No
Mahaney Dome *	2.2	Natural gas		N.A.	No	No
Portable Generator #1* [CAT Model 3306B]	2.19	Distillate		N.A.	N.A.	N.A.
Neville Hall Telecom*	2.44	Distillate		No	N.A.	No
Aquaculture Research Center *	1.22	Distillate		No	N.A.	No
Sawyer Ice Core Freezer *	0.68	Natural gas		N.A.	No	No
Public Safety *	1.19	Propane	After June 12, 2006	N.A.	Yes	Yes
Facilities Mgt. – HVAC Shop *	0.26	Propane	Prior to June 12, 2006	N.A.	No	No
Central Steam Plant *	0.43	Propane		N.A.	No	No
Hancock Hall *	0.26	Propane		N.A.	No	No
Alfond Sports Stadium *	0.34	Propane		N.A.	No	No

* Denotes generators/engines that are considered small (<3 MMBtu/hr)

Each of the above emergency generators/engines shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. There is no limit on emergency operation. BPT for distillate fuel fired emergency generators and engines includes the use of distillate fuel with a sulfur content not to exceed 15 ppm (0.0015% by weight).

1. Control Equipment

   The Memorial Gym Generator is equipped with non-selective catalytic reduction (NSCR) as BACT for the control of NO_x emissions. There are no other control equipment devices installed on any of the other emergency generators/engines at the facility.

2. New Source Performance Standards (NSPS)

   40 C.F.R. Part 60, Subpart IIII

   Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to Alfond Arena, Neville Hall Data Center, and Wells Commons Generators, since the units were ordered after July 11, 2005, and manufactured after April 1, 2006. By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the internal combustion engines (ICE) also meet the requirements found in *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. Part 60, Subpart JJJJ

   The federal regulation 40 C.F.R. Part 60, Subpart JJJJ, *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE)* is only applicable to the Memorial Gym, Public Safety, York Hall, and Estabrooke Hall Generators since the units were ordered after June 12, 2006 and manufactured after January 1, 2009. By meeting the requirements of Subpart JJJJ, the units also meet 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.

   The Cutler Health Center, Murray Hall, Class of 1944 Hall, Mahaney Dome, Sawyer Ice Core Freezer, Facilities Mgt. – HVAC Shop, Central Steam Plant, Hancock Hall, and Alfond Sports Stadium Generators were installed prior to the June 2006 applicability date for 40 C.F.R. Part 60, Subpart JJJJ and are therefore exempt from this federal regulation.

   All the other generators on site fire distillate fuel, classifying the engines as compression ignited units and therefore are not subject to 40 C.F.R. Part 60, Subpart JJJJ.

Emergency Engines which would otherwise be subject to subpart ZZZZ because of their year of manufacture and installation, and meet the definition of *Institutional Emergency Stationary RICE* found in 40 C.F.R. § 63.6675 are not subject to Subpart ZZZZ if the engine meets the requirements of 40 C.F.R. § 63.6585(f)(3).

Definitions and Requirements of 40 C.F.R. Part 60, Subparts IIII and JJJJ

a. Emergency Engine Designation and Operating Criteria
[40 C.F.R. § 60.4211(f) and § 60.4219 for Subpart IIII and 40 C.F.R. § 60.4243(d) and § 60.4248 for Subpart JJJJ]

Under Subpart IIII and JJJJ, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under Subpart IIII and JJJJ, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance

company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

(ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

b. 40 C.F.R. Part 60, Subpart IIII Requirements
(Applicable to the Alfond Arena, Neville Hall Data Center, and Wells Commons Generators)

Manufacturer Certification Requirement
The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4205(b)]

Ultra-Low Sulfur Fuel Requirement
The distillate fuel fired in the engines 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)]

c. 40 C.F.R. Part 60, Subpart JJJJ Requirements
(Applicable to the Memorial Gym, Public Safety, York Hall and Estabrooke Hall Generators)

Manufacturer Certification Requirement

The Memorial Gym engine shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1.

The York Hall, Public Safety, and Estabrooke Hall engines shall be certified by the manufacturer to the Phase 1 standards contained in 40 C.F.R. Part 90.

d. 40 C.F.R. Part 60, Subpart IIII and JJJJ Requirements
(Applicable to the Alfond Arena, Neville Hall Data Center, Memorial Gym, Wells Commons, York Hall, Estabrooke Hall, and Public Safety Generators):

(1) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 60.4209(a) and § 60.4237]

(2) Operation and Maintenance Requirement
The engines shall be operated and maintained according to the manufacturer's emission-related written instructions. UMaine may only change those emission-related settings that are permitted by the manufacturer.
[40 C.F.R. § 60.4211(a) and § 60.4243]

(3) Annual Time Limit for Maintenance and Testing
The engines shall each be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in § 60.4211(f)(3)(i) or § 60.4243 (d)(3)(i) are met).
[40 C.F.R. § 60.4211(f) and § 60.4243 (d)]

(4) Initial Notification Requirement
No initial notification is required for emergency engines. [40 C.F.R. § 60.4214(b)]

(5) Recordkeeping
UMaine shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, including what classified the operation as emergency, and the number of hours each unit operated for non-emergency purposes. [40 C.F.R. § 60.4214(b) and 40 C.F.R. § 60.4245(b)]

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The federal regulation 40 C.F.R. Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to certain stationary generators at UMaine. Portable Generators #1 (CAT Model 3306B) and #2 (CAT Model 3406C) are portable units and therefore are not subject to the federal regulation which is only applicable to

stationary units. Under 40 C.F.R. Part 63, Subpart ZZZZ, a generator is classified as new or existing.

The following generators are classified as new units:

- Alfond Arena Generator
- Neville Hall Data Center Generator
- Memorial Gym Generator
- Public Safety Generator
- York Hall Generator
- Well Commons Generator
- Estabrooke Hall Generator
-

The new engines listed above are subject to NSPS 40 C.F.R. Part 60, Subpart IIII or JJJJ. By meeting the requirements of Subpart IIII or JJJJ as discussed in the previous section, these units also meet the requirements found in 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590]

The following generators are classified as existing units:

- Hitchner Hall Generator *
- Aubert Hall Generator
- Barrows Hall Generator *
- Cutler Health Center Generator
- Murray Hall Generator
- Class of 1944 Hall Generator
- Mahaney Dome Engine
- Aquaculture Research Center Generator
- Neville Hall Telecom
- Sawyer Ice Core Freezer Generator
- Facilities Mgt. – HVAC Shop Generator
- Central Steam Plant Generator
- Hancock Hall Generator
- Alfond Sports Stadium Generator

The existing generators and engines listed above are classified as institutional emergency engines and are therefore exempt from Subpart ZZZZ. If a generator no longer meets the definition of an emergency engine then the unit shall comply with all applicable emission standards and requirements for non-emergency engines in 40 C.F.R. Part 63, Subpart ZZZZ.

* The Hitchner Hall and Barrows Hall Generators were previously licensed and designated as emergency units with the allowance for each to participate in a peak load reduction program for 40 hours per year in amendment A-204-70-H-A (issued July 12, 2011). However, the federal regulation 40 C.F.R. Part 63, Subpart ZZZZ

only allowed peak shaving for emergency units until May 3, 2014. Therefore, the Hitchner Hall and Barrows Hall Generators shall no longer participate in a peak demand program. If UMaine operates the generators in a peak demand program, the facility shall comply with all applicable emission standards and requirements for non-emergency engines in 40 C.F.R. Part 63, Subpart ZZZZ.

4. Emission Limits and Streamlining

a. For the emergency generators/engines rated less than 3 MMBtu/hour that, a listing of potentially applicable emission factors and standards, the origin and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found in the tables below.

The following is a list of the generators with maximum capacity below 3 MMBtu/hour.

- Cutler Health Center Generator (firing propane)
- Murray Hall Generator (firing propane)
- Class of 1944 Hall Generator (firing propane)
- Mahaney Dome Engine (firing natural gas)
- Aquaculture Research Center Generator (firing distillate fuel)
- Neville Hall Telecom Generator (firing distillate fuel)
- Sawyer Ice Core Freezer Generator (firing natural gas)
- Public Safety Generator (firing propane)
- Facilities Mgt. – HVAC Shop Generator (firing propane)
- Central Steam Plant Generator (firing propane)
- Hancock Hall Generator (firing propane)
- Alfond Sports Stadium Generator (firing propane)
- Portable Generator #1 (Model 3306B) (firing distillate fuel)
- York Hall Generator (firing propane or natural gas)
- Estabrooke Hall Generator (firing propane)

Natural Gas and Propane Fired Generator Emission Limits

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to develop Emission Limits
PM	0.00950 lb/MMBtu	AP-42, Table 3.2-3, 7/00	0.00950 lb/MMBtu
SO_2	5.88 E-04 lb/MMBtu	AP-42, Table 3.2-3, 7/00	5.88 E-04 lb/MMBtu
NO_x	2.27 lb/MMBtu	AP-42, Table 3.2-3, 7/00	2.27 lb/MMBtu
CO	3.51 lb/MMBtu	AP-42, Table 3.2-3, 7/00	3.51 lb/MMBtu
VOC	0.030 lb/MMBtu	AP-42, Table 3.2-3, 7/00	0.030 lb/MMBtu
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	10% opacity on a six-minute block average basis

Emission Limits for York Hall Emergency Generator
[A-204-77-9-A (2/1/2016)]

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to develop Emission Limits
PM	0.019lb/MMBtu	AP-42, Table 3.2-3, 7/00	0.019 lb/MMBtu
SO_2	5.88 E-04 lb/MMBtu	AP-42, Table 3.2-3, 7/00	5.88 E-04 lb/MMBtu
NO_x	5.35 g/bhp-hr	Manufacturer's data	5.35 g/bhp-hr
CO	85.09 g/bhp-hr	Manufacturer's data	85.09 g/bhp-hr
VOC	0.80 g/bhp-hr	Manufacturer's data	0.80 g/bhp-hr
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	10% opacity on a six-minute block average basis

Emission Limits for the Estabrooke Hall Generator
[A-204-77-12-M (10/23/2018)]

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to develop Emission Limits
PM	0.05 lb/MMBtu	06-096 C.M.R. ch. 115, BACT	0.05 lb/MMBtu
SO_2	5.88 E-04 lb/MMBtu	AP-42, Table 3.2-3, 7/00	5.88 E-04 lb/MMBtu
NO_x	1.64 g/bhp-hr	Manufacturer's data	1.64 g/bhp-hr
CO	132.7 g/bhp-hr	Manufacturer's data	132.7 g/bhp-hr
VOC	1.95 g/bhp-hr	Manufacturer's data	1.95 g/bhp-hr
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	10% opacity on a six-minute block average basis

Distillate Fired Generator Emission Factors

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to develop Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 140, BPT	0.12 lb/MMBtu
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	06-096 C.M.R. ch. 140, BPT	0.0015 lb/MMBtu
NO_x	4.41 lb/MMBtu	AP-42, Table 3.3-1, 10/96	4.41 lb/MMBtu
CO	0.95 lb/MMBtu	AP-42, Table 3.3-1, 10/96	0.95 lb/MMBtu
VOC	0.35 lb/MMBtu	AP-42, Table 3.3-1, 10/96	0.35 lb/MMBtu

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to develop Emission Limits
Visible Emissions	20% opacity on a six-minute block average basis,	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

% S = percent fuel sulfur, by weight

Emissions shall not exceed the following [06-096 C.M.R. ch. 140, BACT]:

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Cutler Health Center	0.01	0.01	0.01	0.25	0.39	0.01
Murray Hall	0.01	0.01	0.01	2.32	3.58	0.03
Class of 1944 Hall	0.01	0.01	0.01	1.36	2.11	0.02
Mahaney Dome	0.02	0.02	0.01	4.99	7.72	0.07
Aquaculture Research Center	0.15	0.15	0.01	5.38	1.16	0.43
Neville Hall Telecom	0.29	0.29	0.01	10.76	2.32	0.85
Sawyer Ice Core Freezer	0.01	0.01	0.01	1.54	2.39	0.02
Public Safety	0.01	0.01	0.01	2.70	4.18	0.04
Facilities Mgt. – HVAC Shop	0.01	0.01	0.01	0.59	0.91	0.01
Central Steam Plant	0.01	0.01	0.01	0.98	1.51	0.01
Hancock Hall	0.01	0.01	0.01	0.59	0.91	0.01
Alfond Sports Stadium	0.01	0.01	0.01	0.77	1.19	0.01
Portable Generator #1 (Model 3306B)	0.26	0.26	0.01	9.66	2.08	0.77
York Hall	0.02	0.02	0.01	1.18	18.82	0.18
Estabrooke Hall	0.02	0.02	--	0.18	14.16	0.21

b. The following is a list of the emergency generators with maximum capacity at or above 3 MMBtu/hour.

- Portable Generator #2 (Model 3406C) (firing distillate fuel)
- Hitchner Hall Generator (firing distillate fuel)
- Aubert Hall Generator (firing distillate fuel)
- Barrows Hall Generator (firing distillate fuel)
- Alfond Arena Generator (firing distillate fuel)
- Neville Hall Data Center Generator (firing distillate fuel)
- Wells Commons Generator (firing distillate fuel)
- Memorial Gym Generator (firing natural gas)

For the engines rated at 3 MMBtu/hour or greater, a listing of potentially applicable emission factors and standards, the origin or/and authority of the standards, notation if streamlining of the standards has been requested, and the applicable emission limits can be found in the following tables.

Distillate Fired Generator Emission Limits at or above 3 MMBtu/hr
[Excluding the Alfond Arena, Neville Hall Data Center, and Wells Commons Generators]

Pollutant, Units		Applicable Emission Factors	Origin and Authority	Emission Limits
PM		0.12 lb/MMBtu	06-096 C.M.R. ch. 103, (2)(B)(1)(a), BPT	0.12 lb/MMBtu
SO_2		0.0015 lb/MMBtu *(based on 0.0015% S)*	06-096 C.M.R. ch. 140, BPT	
PM	Port. Gen #2	0.43 lb/hr	A-204-70-D-A (5/22/2003)	0.43 lb/hr
	Hitchner Hall	0.49 lb/hr		0.49 lb/hr
	Aubert Hall	0.38 lb/hr		0.38 lb/hr
	Barrows Hall	0.38 lb/hr		0.38 lb/hr
PM_{10}	Port. Gen #2	0.43 lb/hr	A-204-70-D-A (5/22/2003)	0.43 lb/hr
	Hitchner Hall	0.49 lb/hr		0.49 lb/hr
	Aubert Hall	0.38 lb/hr		0.38 lb/hr
	Barrows Hall	0.38 lb/hr		0.38 lb/hr
SO_2	Port. Gen #2	0.0015 lb/MMBtu [1]	06-096 C.M.R. ch. 140, BPT	0.01 lb/hr
	Hitchner Hall	0.0015 lb/MMBtu [1]		0.01 lb/hr
	Aubert Hall	0.0015 lb/MMBtu [1]		0.01 lb/hr
	Barrows Hall	0.0015 lb/MMBtu[1]		0.01 lb/hr
NO_x	Port. Gen #2	8.17 lb/hr	A-204-70-D-A (5/22/2003)	8.17 lb/hr
	Hitchner Hall	9.08 lb/hr		9.08 lb/hr
	Aubert Hall	9.29 lb/hr		9.29 lb/hr
	Barrows Hall	9.29 lb/hr		9.29 lb/hr
CO	Port. Gen #2	1.87 lb/hr	A-204-70-D-A (5/22/2003)	1.87 lb/hr
	Hitchner Hall	4.16 lb/hr		4.16 lb/hr
	Aubert Hall	2.80 lb/hr		2.80 lb/hr
	Barrows Hall	2.80 lb/hr		2.80 lb/hr
VOC	Port. Gen #2	0.10 lb/hr	A-204-70-D-A (5/22/2003)	0.10 lb/hr
	Hitchner Hall	0.10 lb/hr		0.10 lb/hr
	Aubert Hall	0.16 lb/hr		0.16 lb/hr
	Barrows Hall	0.16 lb/hr		0.16 lb/hr
Visible Emissions		20% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

[1] streamlined

Alfond Arena Generator Emission Limits [A-204-77-4-A (7/19/2011)]

Pollutant	Applicable Emission Factors and Standards	Origin and Authority	Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section 2(B)(1)(a)	0.03 lb/MMBtu [1]
	0.03 lb/MMBtu	A-204-77-4-A, (7/19/2011)	
PM/PM_{10}	0.10 lb/hr	A-204-77-4-A, (7/19/2011)	0.10 lb/hr
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	06-096 C.M.R. ch. 140, BPT	0.005 lb/hr
NO_x	2.89 lb/hr	A-204-77-4-A, (7/19/2011)	2.89 lb/hr
CO	0.68 lb/hr	A-204-77-4-A, (7/19/2011)	0.68 lb/hr
VOC	0.08 lb/hr	A-204-77-4-A, (7/19/2011)	0.08 lb/hr
Visible Emissions	20% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

[1] streamlined

Neville Hall Data Center Generator Emission Limits [A-204-77-5-A (10/12/2011)]

Pollutant	Applicable Emission Factors	Origin and Authority	Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section 2(B)(1)(a)	0.02 lb/MMBtu [1]
	0.02 lb/MMBtu	A-204-77-5-A, (10/12/2011)	
PM/PM_{10}	0.13 lb/hr	A-204-77-5-A, (10/12/2011)	0.13 lb/hr
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	A-204-77-5-A, (10/12/2011)	0.012 lb/hr
NO_x	17.02 lb/hr	A-204-77-5-A, (10/12/2011)	17.02 lb/hr
CO	1.13 lb/hr	A-204-77-5-A, (10/12/2011)	1.13 lb/hr
VOC	0.15 lb/hr	A-204-77-5-A, (10/12/2011)	0.15 lb/hr
Visible Emissions	20% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

[1] streamlined

Memorial Gym Generator Emission Limits [A-204-77-7-A (8/19/2013)]

Pollutant	Applicable Emission Factors and Standards	Origin and Authority	Emission Factors and Limits
PM/PM_{10},	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section 2(B)(1)(a)	0.0095 lb/MMBtu[1] 0.03 lb/hr
	0.0095 lb/MMBtu	A-204-77-7-A, (8/19/2013)	
SO_2	0.0006 lb/MMBtu	A-204-77-7-A, (8/19/2013)	0.002 lb/hr
NO_x	0.03 g/BHP-hr	A-204-77-7-A, (8/19/2013)	0.03 lb/hr
CO	0.53 g/BHP-hr	A-204-77-7-A, (8/19/2013)	0.44 lb/hr
VOC	0.38 g/BHP-hr	A-204-77-7-A, (8/19/2013)	0.32 lb/hr
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch.140, BPT	10% opacity on a six-minute block average basis

[1] streamlined

Wells Commons Generator Emission Limits [A-204-77-11-A (5/24/2018)]

Pollutant, Units	Applicable Emission Factors and Standards	Origin and Authority	Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section 2(B)(1)(a)	0.02 lb/MMBtu [1]
	0.02 lb/MMBtu	A-204-77-11-A (5/24/2018)	
PM/PM_{10}	0.08 lb/hr	A-204-77-11-A (5/24/2018)	0.08 lb/hr
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	06-096 C.M.R. ch. 140, BPT	0.01 lb/hr
NO_x	8.17 lb/hr	A-204-77-11-A (5/24/2018)	8.17 lb/hr
CO	1.93 lb/hr	A-204-77-11-A (5/24/2018)	1.93 lb/hr
VOC	0.07 lb/hr	A-204-77-11-A (5/24/2018)	0.07 lb/hr
Visible Emissions	10% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	10% opacity on a six-minute block average basis

[1] streamlined

5. Emission Limit Compliance Methods

Compliance with the emission limits associated with the emergency generators and engines shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Periodic Monitoring

UMaine shall monitor and record values for each emergency generator or engine as indicated in the following table.

Monitored Values	Units of Measure	Monitoring Tool/Method	Frequency Monitor/Record
Fuel sulfur content	Percent, by weight	Fuel delivery records from supplier	As fuel is delivered
Operating time	Hours	Hour Meter	Annually
Type of Operation (emergency, maintenance, etc.)	N/A	Logbook or electronic record such as spreadsheet	As occurs, written or electronic log updated at least monthly

7. Parameter Monitors

There are no Parameter Monitors required for the generators and engines.

8. CEMS and COMS

There are no CEMS or COMS required for the generators and engines.

N. Non-Emergency Generators

UMaine operates the following non-emergency generators:

Generator/Engine	Max. Input Capacity, MMBtu/hr	Fuel	Year of Install.	Applicable Requirements in... NSPS Subpart IIII	NSPS Subpart JJJJ	NESHAP Subpart ZZZZ
Recreation Center Generator	4.6	Distillate fuel	2007	Yes	N.A	Yes
Hilltop Commons Generator	5.8	Distillate fuel	2007	Yes	N.A.	Yes
Collins Center Generator	4.1	Distillate fuel	2008	Yes	N.A.	Yes

Each of the non-emergency generators shall continue to be limited to 500 hours per year operation time. BPT for distillate fuel fired generators and engines includes the use of distillate fuel with a sulfur content not to exceed 15 ppm (0.0015% by weight).

The above generators were previously licensed and designated as emergency units with the allowance for each to participate in peak shaving for 40 hours per year as was licensed in amendment A-204-70-H-A (issued July 12, 2011). However, the federal regulation 40 C.F.R. Part 60, Subpart IIII only allowed peak shaving for emergency units until May 3, 2014. Therefore, UMaine has requested to classify the above generators as non-emergency units to continue to participate in a peak demand program. As a non-emergency engine, there is no time limit to the operation of a generator in any demand response or

peak demand programs; therefore, the previously licensed 40 hours/year time limit in license A-204-70-H-A (issued July 12, 2011) for these programs is now void.

1. Control Equipment

   There are no control equipment devices installed on any of the non-emergency generators at the facility.

2. New Source Performance Standards (NSPS)

   The federal regulation 40 C.F.R. Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to the Recreation Center, Hilltop Commons, and Collins Center Generators, since the units were ordered after July 11, 2005, and manufactured after April 1, 2006.

   40 C.F.R. Part 60, Subpart IIII Requirements

   a. Manufacturer Certification Requirement

      (1) The Recreation Center Generator shall meet the emission standards found in 40 C.F.R. Part 60, Subpart IIII, Table 1. UMaine shall demonstrate compliance by maintaining documentation showing that the Generator's engine is certified to the applicable emission standards in 40 C.F.R. Part 89.
      [40 C.F.R. § 60.4204(a) and 60.4211(b)(1)]

      (2) The Hilltop Commons and Collins Center Generators shall be certified by the manufacturer as meeting the emission standards found in 40 C.F.R. Part 89.
      [40 C.F.R. § 60.4211(c)]

   b. Ultra-Low Sulfur Distillate Fuel Requirement

      The distillate fuel fired in the generators 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)]

   c. Operation and Maintenance Requirements

      The generators shall be operated and maintained according to the manufacturer's emission-related written instructions. UMaine may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

      If the generators are not operated and maintained according to the manufacturer's emission-related written instructions or changes are made to the emission-related settings in a way that is not permitted by the manufacturer, UMaine shall demonstrate compliance with the emission limits according to § 60.4211(g)(3). To demonstrate compliance UMaine shall conduct an initial performance test within

1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The federal regulation 40 C.F.R. Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to the Recreation Center, Hilltop Commons, and Collins Center Generators. The Hilltop Commons and Collins Center units are considered new, non-emergency stationary reciprocating internal combustion engines at an area HAP source. However, the units are also subject to New Source Performance Standards. By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)*, the units also meet the requirements found in 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)(1)]

The Recreation Center Generator is classified as an existing, non-emergency stationary CI ICE at an area HAP source. Subpart ZZZZ provides that the owner or operator of an existing non-emergency CI ICE with a site rating of more than 300 Brake Horsepower located at an area source of HAP emissions that is certified to EPA's Tier 3 emission standards in Table 1 of 40 CFR Part § 89.112 may comply with Subpart ZZZZ by meeting the requirements for Tier 3 engines in 40 CFR Part 60 Subpart IIII instead of the emission limitations contained in Subpart ZZZZ. The Recreation Center Generator meets the EPA Tier 3 certification criteria and therefore meets the requirements of Subpart ZZZZ.
[40 C.F.R. § 63.6603(e)]

4. Emission Limits and Streamlining

For the Recreation Center, Hilltop Commons, and Collins Center Generators, a listing of potentially applicable emission factors and standards, the origin and authority of the standards, and the applicable emission limits can be found in the tables below.

Recreation Center Generator Emission Limits
[A-204-70-F-R (1/15/2009) and A-204-77-1-A (7/1/2008)]

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to Develop Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section (2)(B)(1)(a)	0.12 lb/MMBtu
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	A-204-77-1-A (7/1/2008)	0.0015 lb/MMBtu
NO_x	5.93 lb/hr	A-204-77-1-A (7/1/2008)	5.93 lb/hr
CO	0.80 lb/hr	A-204-77-1-A (7/1/2008)	0.80 lb/hr
VOC	0.12 lb/hr	A-204-77-1-A (7/1/2008)	0.12 lb/hr
Visible Emissions	20% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

Hilltop Commons Generator Emission Limits
[A-204-70-F-R (1/15/2009) and A-204-77-1-A (7/1/2008)]

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to Develop Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section (2)(B)(1)(a)	0.12 lb/MMBtu
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	A-204-77-1-A (7/1/2008)	0.0015 lb/MMBtu
NO_x	11.72 lb/hr	A-204-77-1-A (7/1/2008)	11.72 lb/hr
CO	0.95 lb/hr	A-204-77-1-A (7/1/2008)	0.95 lb/hr
VOC	0.13 lb/hr	A-204-77-1-A (7/1/2008)	0.13 lb/hr
Visible Emissions	20% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

Collins Center Generator Emission Limits
[A-204-70-F-R (1/15/2009) and A-204-77-2-A (10/29/2008)]

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to Develop Emission Limits
PM	0.12 lb/MMBtu	06-096 C.M.R. ch. 103, Section (2)(B)(1)(a)	0.12 lb/MMBtu
SO_2	0.0015 lb/MMBtu *(based on 0.0015% S)*	A-204-77-2-A (10/29/2008)	0.0015 lb/MMBtu

Pollutant	Applicable Emission Factors	Origin or Authority	Emission Factors used to Develop Emission Limits
NO_x	5.21 lb/hr	A-204-77-2-A (10/29/2008)	5.21 lb/hr
CO	1.47 lb/hr	A-204-77-2-A (10/29/2008)	1.47 lb/hr
VOC	0.09 lb/hr	A-204-77-2-A (10/29/2008)	0.09 lb/hr
Visible Emissions	20% opacity on a six-minute block average basis	06-096 C.M.R. ch. 140, BPT	20% opacity on a six-minute block average basis

% S = percent fuel sulfur, by weight

Emissions shall not exceed the following:

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Recreation Center Generator	0.55	0.55	0.01	5.93	0.80	0.12
Hilltop Commons Generator	0.70	0.70	0.01	11.72	0.95	0.13
Collins Center Generator	0.49	0.49	0.01	5.21	1.47	0.09

5. Emission Limit Compliance Methods

Compliance with the emission limits associated with the non-emergency generators shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

6. Periodic Monitoring

UMaine shall monitor and record the values as indicated in the following table for each non-emergency generator.

Monitored Values	Units of Measure	Monitoring Tool/Method	Frequency	
			Monitor	Record
Fuel sulfur content	Percent, by weight	Fuel delivery records from supplier	As fuel is delivered	
Operating time	Hours	Hour Meter	Annually	

7. Parameter Monitors

There are no Parameter Monitors required for the non-emergency generators.

8. CEMS and COMS

There are no CEMS or COMS required for the non-emergency generators.

O. Printing Services Department

UMaine has a Printing Services Department that includes sheet-fed offset printers, latex-based ink jet printers and production grad copy machines. The equipment located in the Printing Services Department is used to produce a variety of publications.

1. Control Equipment

   There is no add-on control equipment installed on any of the printing operations equipment.

2. Emission Limits and Streamlining

   The Department determined that BPT for the printing operations equipment was to not exceed a VOC annual limit of 2.0 tons per year based on a calendar year. [A-204-70-F-R (January 15, 2009)]

3. Periodic Monitoring

   Periodic monitoring shall consist of recordkeeping of all chemical usage in the Printing Services Department, which includes the amount used of each chemical and the respective chemical's VOC content and percentage of HAP. Records of usage and VOC and HAP contents shall be kept on a calendar year basis.
   [A-204-70-F-R (January 15, 2009)]

P. Parts Washers

UMaine operates a parts washer at the Steam Plant. The parts washer uses distillate fuel as a solvent, and as such, the parts washer is subject to and shall meet the requirements of *Solvent Cleaners,* 06-096 C.M.R. ch. 130 (as amended).

Periodic monitoring for the parts washer shall consist of recordkeeping including records of the amounts of solvent added.

Q. Gasoline Storage Tanks

UMaine utilizes one 6,000 gallon underground storage tank for gasoline and the associated dispensing equipment at the Service Building. The monthly gasoline throughputs for the storage tanks is currently less than 10,000 gallons. UMaine has numerous small distillate fuel tanks on campus, but none of them are subject to these requirements listed below.

1. State Air Rule, 06-096 C.M.R. ch. 111

   Due to the storage capacity, the gasoline tank is not subject to 06-096 C.M.R. ch. 111, *Petroleum Liquid Storage Vapor Control* which applies to all fixed roof storage vessels with capacities greater than 39,000 gallons containing volatile petroleum liquids whose true vapor pressure is greater than 10.5 kPa.

2. State Air Rule, 06-096 C.M.R. ch. 118

   The gasoline storage tanks and associated dispensing equipment is subject to 06-096 C.M.R. ch. 118, *Gasoline Dispensing Facilities Vapor Control.* However, due to the monthly throughput of the gasoline storage tanks being less than 10,000 gallons per calendar month, UMaine is only required to comply with the requirements in Sections 4(A) and 10(B) of the rule. [06-096 C.M.R. ch. 118, Section 1(B)(1)]. The applicable requirements in 06-096 C.M.R. ch. 118, Sections 4(A) and 10(B) are as follows:

   a. The fill pipe shall extend within six inches of the bottom of the gasoline storage tank. [06-096 C.M.R. ch. 118]

   b. The licensee shall maintain records of the monthly and annual throughput of gasoline. [06-096 C.M.R. ch 118]

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

   The federal regulation 40 C.F.R. Part 63, Subpart CCCCCC, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Category: Gasoline Dispensing Facilities* is applicable to the gasoline storage tanks and associated equipment because UMaine is considered an area source for hazardous air pollutants (HAP). Due to the monthly through put being less than 10,000 gallons, there are no applicable emission standards or notification/reports requirements. However, the facility shall keep records of gasoline throughput and shall not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, minimizing gasoline spills, cleaning up spills as expeditiously as practicable, cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use, and minimizing gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
   [40 C.F.R. Part 63, Subpart CCCCC, § 63.11116]

4. New Source Performance Standards (NSPS)

Due to the size and age of the tank, the gasoline tank is not subject to the following:

- 40 C.F.R. Part 60, Subpart K, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978*,
- 40 C.F.R. Part 60, Subpart Ka, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984*,
- 40 C.F.R. Part 60, Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.*

R. HAP Emissions

1. HAP emissions shall not exceed:
   a. A facility wide limit of 9.9 tons per year of any one HAP based on a calendar year total.
   b. A facility wide limit of 24.9 tons per year of total HAP based on a calendar year total.
2. The records and calculations documenting compliance with the above limits for HAP shall be based on emission factors, chemical use and HAP content information from Safety Data Sheets or manufacturer information. Compliance with these HAP limits shall be based on the HAP emission from the emission sources that are addressed in this license.
3. If HAP emissions reported required by 06-096 C.M.R ch. 137 is greater than 5 tons per year for any one HAP or greater than 12.5 tons per year of all the HAP then UMaine shall calculate HAP emissions annually, otherwise, UMaine may utilize the HAP emissions reported in its most recently submitted Chapter 137 emissions statement to demonstrate compliance with the HAP limits.
   [06-096 C.M.R. ch. 140, BPT]

S. Emissions Statement

UMaine is subject to emissions inventory requirements contained in *Emission Statements*, 06-096 C.M.R. ch. 137. UMaine shall maintain the following records in order to comply with this rule:

1. The amount of each fuel fired in Boiler #5, #6, #7, #8, the Global Science Boilers #1 and #2 (each) on a monthly basis;
2. The sulfur content of the No. 6 fuel fired in Boilers #5, #6, #7;
3. The combined amount of natural gas fired on an annual basis in "Small Boilers (< 3.2 MMBtu/hr)" as listed in the emissions inventory reporting program

4. The amount of each fuel fired or the number of hours of operation and the sulfur content of the distillate fired (if applicable) in the following generators on a monthly basis:
   - Portable Generator #2 (Model 3406C)
   - Hitchner Hall Generator
   - Aubert Hall Generator
   - Barrows Hall Generator
   - Alfond Arena Generator
   - Neville Hall Data Center Generator
   - Wells Commons Generator
   - Memorial Gym Generator;
5. The amount of fuel fired in or the number of hours of operation of generators designated as "Small Generators (< 3 MMBtu/hr) firing natural gas or propane" as listed in the emissions inventory reporting program. This heading includes the following generators:
   - Cutler Health Center Generator
   - Murray Hall Generator
   - Class of 1944 Hall Generator
   - Mahaney Dome Engine
   - Sawyer Ice Core Freezer Generator
   - Public Safety Generator
   - Facilities Mgt. – HVAC Shop Generator
   - Central Steam Plant Generator
   - Hancock Hall Generator
   - Alfond Sports Stadium Generator
   - Estabrooke Hall
   - York Hall
6. The amount of fuel fired or the number of hours of operation and the sulfur content of the distillate fired in the following generators designated as "Small Generators (< 3 MMBtu/hr) firing distillate" as listed in the emissions inventory reporting program on a monthly basis and includes the following:
   - Aquaculture Research Center Generator
   - Neville Hall Telecom Generator
   - Portable Generator #1 (Model 3306B)
7. Calculations of the VOC and/or HAP emissions from Printing Services on a calendar year total basis; and
8. Hours of operation for each specifically listed emission unit.

In reporting year 2020 and every third year thereafter, UMaine shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). The Department will use these reports to calculate and invoice for the applicable annual air quality surcharge for the subsequent three billing periods. UMaine shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

T. Facility Annual Emissions

1. Total Annual Emissions

UMaine is licensed for the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on the established limits and operation of 8,760 hours/year for each of the Global Science Boilers and Small Boilers; 100 hours/year for each emergency generator; 500 hours/year for each non-emergency generator; an annual No. 6 Fuel Oil use limit of 3,500,000 gallons per year based on a 12-month rolling total; and the established BPT for the Printing Services Department.

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

	PM	PM_{10}	SO_2	NOx	CO	VOC
Steam Plant Boilers (#5, #6, #7, and #8)	26.3	26.3	136.5	144.4	157.5	26.3
Global Science Boiler #1	1.0	1.0	0.01	1.9	1.6	0.1
Global Science Boiler #2	1.0	1.0	0.01	1.9	1.6	0.1
Small Boilers (< 3.2 MBtu/hr)	0.8	0.8	0.1	10.4	8.7	0.6
Portable Generator #2 (Model 3406C)	0.02	0.02	0.01	0.4	0.1	0.01
Hitchner Hall Generator	0.02	0.02	0.01	0.5	0.2	0.01
Aubert Hall Generator	0.02	0.02	0.01	0.5	0.1	0.01
Barrows Hall Generator	0.02	0.02	0.01	0.5	0.1	0.01
Alfond Arena Generator	0.01	0.01	0.01	0.1	0.03	0.01
Neville Hall Data Center Generator	0.01	0.01	0.01	0.9	0.1	0.01
Memorial Gym Generator	0.01	0.01	0.01	0.01	0.02	0.02
Wells Commons Generator	0.01	0.01	0.01	0.41	0.1	0.01
York Hall Generator	0.01	0.01	0.01	0.06	0.94	0.01
Estabrooke Hall Generator	0.01	0.01	0.01	0.01	0.71	0.01
Small Generators (<3 MMBtu/hr) firing Natural Gas/Propane	0.01	0.01	0.01	0.81	1.24	0.01
Small Generators (<3 MMBtu/hr) firing Distillate	0.04	0.04	0.01	1.3	0.28	0.10
Recreation Center Generator	0.1	0.1	0.01	1.5	0.2	0.03
Hilltop Commons Generator	0.2	0.2	0.01	2.9	0.2	0.03
Collins Center Generator	0.1	0.1	0.01	1.3	0.4	0.02
Printing Services	-	-	-	-	-	2.0
Total TPY	**29.7**	**29.7**	**136.7**	**169.4**	**173.4**	**29.4**

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans,* 40 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100, are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO_2e).

The quantity of potential CO_2e emissions from this facility is greater than 100,000 tons per year, based on the following:

- the facility's maximum theoretical fuel consumption;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting,* 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. Part 98.

As defined in 06-096 C.M.R. ch. 100, any source emitting or having the potential to emit 100,000 tons/year or more of CO_2e is a major source for GHG. This license includes applicable requirements addressing GHG emissions from this source, as appropriate.

III. AMBIENT AIR QUALITY ANALYSIS

UMaine previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-204-77-3-A, issued on June 9, 2011). An additional ambient air quality analysis is not required for this Part 70 License.

ORDER

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

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

The Department hereby grants the Part 70 License A-204-70-J-R/A pursuant to 06-096 C.M.R. ch. 140 and the preconstruction permitting requirements of 06-096 C.M.R. ch. 115 and subject to the standard and specific conditions below.

All federally enforceable and State-only enforceable conditions in existing air licenses previously issued to UMaine pursuant to the Department's preconstruction permitting requirements have been incorporated into this Part 70 license, except for such conditions that the Department has determined are obsolete, extraneous, or otherwise environmentally insignificant, as explained in the Findings of Fact accompanying this Order. As such, the conditions in this license supersede all previously issued air license conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each standard and specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only**.

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 STATEMENTS

(1) 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. 140]

(2) The Part 70 license does not convey any property rights of any sort, or any exclusive privilege; [06-096 C.M.R. ch. 140]

(3) All terms and conditions are enforceable by EPA and citizens under the CAA unless specifically designated as state enforceable. [06-096 C.M.R. ch. 140]

(4) 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. 140]

(5) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 C.M.R. ch. 140]

(6) Compliance with the conditions of this Part 70 license shall be deemed compliance with any Applicable requirement as of the date of license issuance and is deemed a permit shield, provided that:

A. Such Applicable and state requirements are included and are specifically identified in the Part 70 license, except where the Part 70 license term or condition is specifically identified as not having a permit shield; or

B. The Department, in acting on the Part 70 license application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the Part 70 license includes the determination or a concise summary, thereof.

Nothing in this section or any Part 70 license shall alter or affect the provisions of Section 303 of the CAA (emergency orders), including the authority of EPA under Section 303; the liability of an owner or operator of a source for any violation of Applicable requirements prior to or at the time of permit issuance; or the ability of EPA to obtain information from a source pursuant to Section 114 of the CAA.

The following requirements have been specifically identified as not applicable based upon information submitted by the licensee in an application dated July 10, 2013.

Permit Shield Table [06-096 C.M.R. ch. 140]

Source	Citation	Description	Basis for Determination
Storage Tanks	06-096 C.M.R. ch. 111	Petroleum Liquid Storage Vapor Control	All tanks except the No. 6 fuel oil bulk storage tanks have storage capacities less than 39,000 gallons. No. 6 fuel oil bulk storage tank is exempt based on the vapor pressure of No. 6 fuel oil.
Facility	06-096 C.M.R. ch. 134	Reasonably Available Control Technology for Facilities That Emit VOCs	Facility emits less than 40 TPY of VOC.
Boilers (all)	40 C.F.R. 60, Subpart D	NSPS for Fossil-Fuel-Fired Steam Generators	Heat input capacity is less than the 250 MMBtu/hr applicability threshold.

Source	Citation	Description	Basis for Determination
Boilers (all)	40 C.F.R. 60, Subpart Da	NSPS for Electric Utility Steam Generating Units	Heat input capacity is less than the 250 MMBtu/hr applicability threshold and boilers do not meet the definition of an electric utility boiler.
Boilers (all)	40 C.F.R. 60, Subpart Db	NSPS for Industrial-Commercial-Institutional Steam Generating Units	Heat input capacity is less than the 100 MMBtu/hr applicability threshold.
Boilers #5, #6, #7, Global Science Boilers #1 and #2, and Small Boilers	40 C.F.R. 60, Subpart Dc	NSPS for Small Industrial-Commercial-Institutional Steam Generating Units	Boilers #5-#7 commenced construction prior to June 9, 1989 applicability date. Global Science and Small Boilers are less than the 10-100 MMBtu/hr applicability threshold.
Storage Tanks	40 C.F.R. 60, Subpart K, Ka, & Kb	NSPS for storage vessels for petroleum liquids	Each tank size is less than the applicable threshold for the storage tank capacity.
Boiler #8, Global Science Boiler #1 and #2, Sawyer Environmental Center Boiler, Service Building A – Room 161M - #1 & #2 Boilers, Alfond Arena – East & West Mech. Room Boilers, Libby Hall Boiler, Keyo Building – PICS Boiler, Alfond Arena – East and West Pad Furnace /Dehumidifiers, & Mahaney Dome Furnace.	40 C.F.R. 63, Subpart JJJJJJ	NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources	Units fire natural gas or do not meet the Subpart JJJJJJ definition of a boiler.

Source	Citation	Description	Basis for Determination
Printing Services	06-096 C.M.R. ch. 161	Graphic Arts – Offset Lithography and Letterpress Printing	Actual VOC emissions less than 3 tons per year.
Facility	40 C.F.R. Part 64	Compliance Assurance Monitoring	No emission unit meets the three applicability requirements.

(7) The Part 70 license shall be reopened for cause by the Department or EPA, prior to the expiration of the Part 70 license, if:

A. Additional Applicable requirements under the CAA become applicable to a Part 70 major source with a remaining Part 70 license term of three or more years. However, no opening is required if the effective date of the requirement is later than the date on which the Part 70 license is due to expire, unless the original Part 70 license or any of its terms and conditions has been extended pursuant to 06-096 C.M.R. ch. 140;

B. Additional requirements (including excess emissions requirements) become applicable to a Title IV source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the Part 70 license;

C. The Department or EPA determines that the Part 70 license contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the Part 70 license; or

D. The Department or EPA determines that the Part 70 license must be revised or revoked to assure compliance with the Applicable requirements.

The licensee shall furnish to the Department within a reasonable time any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the Part 70 license or to determine compliance with the Part 70 license.

[06-096 C.M.R. ch. 140]

(8) No license revision or amendment shall be required, under any approved economic incentives, marketable licenses, emissions trading, and other similar programs or processes for changes that are provided for in the Part 70 license. [06-096 C.M.R. ch. 140]

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 and this license (38 M.R.S. § 347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 140. [06-096 C.M.R. ch. 140]

(3) 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. 140] **Enforceable by State-only**

(4) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to 38 M.R.S. § 353-A.

(5) The licensee shall maintain and operate all emission units and air pollution control 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. 140]
Enforceable by State-only

(6) The licensee shall retain records of all required monitoring data and support information for a period of at least six (6) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Part 70 license. The records shall be submitted to the Department upon written request or in accordance with other provisions of this license. [06-096 C.M.R. ch. 140]

(7) The licensee shall comply with all terms and conditions of the air emission license. The submission of notice of intent to reopen for cause by the Department, 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 the renewal of a Part 70 license or amendment shall not stay any condition of the Part 70 license. [06-096 C.M.R. ch. 140]

(8) 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 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;

2. To demonstrate compliance with the applicable emission standards; or

3. 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. 140] **Enforceable by State-only**

(9) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicates emissions in excess of the applicable standards, then:

A. Within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 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. 140] **Enforceable by State-only**

(10) The licensee shall maintain records of all deviations from license requirements. Such deviations shall include, but are not limited to malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emission unit itself that is not consistent with the terms and conditions of the air emission license.

B. The licensee shall notify the Commissioner within 48 hours of a violation of any emission standard and/or a malfunction or breakdown in any component part that causes a violation of any emission standard, and shall report the probable cause, corrective action, and any excess emissions in the units of the applicable emission limitation;

C. The licensee shall submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component part causes a violation of any emission standard, together with any exemption requests.

Pursuant to 38 M.R.S.A. § 349(9), the Commissioner may exempt from civil penalty an air emission in excess of license limitations if the emission occurs during start-up or shutdown or results exclusively from an unavoidable malfunction entirely beyond the control of the licensee and the licensee has taken all reasonable steps to minimize or prevent any emission and takes corrective action as soon as possible. There may be no exemption if the malfunction is caused, entirely or in part, by poor maintenance, careless operation, poor design, or any other reasonably preventable condition or preventable equipment breakdown. The burden of proof is on the licensee seeking the exemption under this subsection.

D. All other deviations shall be reported to the Department in the facility's semiannual report.

[06-096 C.M.R. ch. 140]

(11) Upon the written request of 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 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. 140]

(12) The licensee shall submit semiannual reports of any required periodic monitoring. All instances of deviations from Part 70 license requirements must be clearly identified in such reports. All required reports must be certified by a responsible official.
[06-096 C.M.R. ch. 140]

(13) The licensee shall submit a compliance certification to the Department and EPA at least annually, or more frequently if specified in the applicable requirement or by the Department. The compliance certification shall include the following:

A. The identification of each term or condition of the Part 70 license that is the basis of the certification;
B. The compliance status;
C. Whether compliance was continuous or intermittent;
D. The method(s) used for determining the compliance status of the source, currently and over the reporting period; and
E. Such other facts as the Department may require to determine the compliance status of the source.

[06-096 C.M.R. ch. 140]

SPECIFIC CONDITIONS

(14) **Facility Annual Fuel Use**

A. No. 6 Fuel Oil

1. UMaine shall not exceed an annual No. 6 fuel oil use limit of 3,500,000 gallons per year, based on a 12-month rolling total. [A-204-72-B-R (10/4/95)]
2. The No. 6 fuel oil shall not exceed a 0.5% sulfur content, by weight. [A-204-77-10-A (3/21/2017)]
3. During the period of May 1st through September 30th of any calendar year, the combined usage of No. 6 fuel oil in Boilers #5, #6, and #7 shall be limited to 600,000 gallons, based on the alternative NO_x RACT findings of 06-096 C.M.R. ch. 138. [A-204-72-D-A (2/20/1996)]
4. UMaine shall maintain records of the facility-wide No. 6 fuel oil indicating the quantity delivered, in gallons, along with the nitrogen content by weight, and the percent sulfur by weight demonstrated by fuel analyses provided by the supplier for each supply tank from which product is taken to be delivered to UMaine (this is to be updated for each shipment the supplier receives and analyzes). UMaine shall maintain records of the usage of No. 6 fuel oil on both a monthly and 12-month rolling total basis. [A-204-72-D-A (2/20/1996) & A-204-70-A-I (11/6/2000)]

B. Distillate Fuel

1. Beginning July 1, 2018, the facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [38 M.R.S. § 603-A(2)(A)(3)(a)]

2. Sulfur Content Compliance
   Sulfur content compliance shall be demonstrated by fuel delivery receipts documenting that if the maximum sulfur content delivered is at or below the sulfur content limits listed above.

C. Used Oil

1. UMaine may combust up to a total of 1,000 gallons/year of specification Used oil generated on site, based on a 12-month rolling total, in the boilers firing No. 6 fuel oil. The oil shall meet the requirements of specification used oil as defined in Chapter 860 of the Department's regulations and in 40 C.F.R. § 279.11. [A-204-70-E-A (10/8/2004)]
2. UMaine shall maintain monthly records of the amount of specification used oil burned in the boilers. The 1,000 gallons/year of used oil shall be included as part of the 3,500,000 gallons/year annual limit for No. 6 fuel oil fired at the facility. [A-204-70-E-A (10/8/2004)]
3. UMaine shall have on-site, a copy of the results of a representative test sample of the used oil. If operations and/or equipment changes occur which may affect the origin or type of used oil collected, then a new representative sample shall be tested and the results shall be kept on file. [A-204-70-E-A (10/8/2004)]

D. Natural Gas

UMaine shall maintain records of the quantity of natural gas burned in Boiler #7, Boiler #8, and the two Global Science Boilers on a monthly basis. [A-204-77-10-A (3/21/2017)]

(15) **Steam Plant Restrictions (Boilers #5, #6, #7, and #8)**

A. UMaine shall be restricted to the following No. 6 fuel oil firing rates for Boilers #5, #6, and #7:
   1. From May 1st through September 30th, UMaine shall not exceed an average firing rate of 721 gal/hr over any one-hour period, and

   2. From October 1st through April 30th, UMaine shall not exceed an average firing rate of 981.3 gal/hr over any given one-hour period.
      The actual fuel oil firing rate at any given moment, as expressed in gallons per hour, may exceed the above values, as long as the total amount of oil burned in any given one-hour period does not exceed the values.
      [A-204-70-A-I (11/6/2000)]

B. UMaine shall maintain records of the total amount of No. 6 fuel oil supplied to Boilers #5 - #7 through operation of a single flow meter on the common fuel supply

line to demonstrate compliance with the above restrictions. In situations where the fuel meter's output does not accurately reflect the actual amount of oil being burned, including but not limited to situations such as oil circulation prior to start-up and the use of a back-up fuel supply system, compliance with the hourly firing rate limits shall be demonstrated through the use of hourly fuel oil readings on the individual boilers, or through steam production data, or other means.
[A-204-70-F-R (1/15/2009)]

C. NO_x RACT

1. UMaine shall conduct a tune-up on Boiler #5, Boiler #6, and Boiler #7 at least once during each calendar year in accordance with 06-096 C.M.R. ch. 138, Section 3(L) and shall comply with the tune-up and recordkeeping requirements of Section 3(L)2. [A-204-72-D-A (2/20/1996)]

2. If the combined usage of No. 6 fuel oil in Boilers #5, #6, and #7 from June 1 through August 31 of any given calendar year exceeds 200,000 gallons, UMaine shall conduct a NO_x emission compliance testing on the boilers that burned the No. 6 fuel oil; the compliance testing shall be conducted by April 1st of the following year and shall be performed to demonstrate compliance with the lb/MMBtu emission limits in this license. [A-204-70-F-R (1/15/2009)]

(16) **Boilers #5 and #6 – 86.8 MMBtu/hr each**

A. Allowable Fuels

Boiler #5 and #6 are licensed to fire No. 6 fuel oil and used oil.
[A-204-70-E-A (10/8/2004)]

B. Boilers #5 & #6 Emission Limits

1. Emissions from each of Boilers #5 and Boiler #6 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.10	A-204-77-10-A (3/21/2017)
PM_{10}	0.10	A-204-77-10-A (3/21/2017)
NO_X (≤0.45% nitrogen)*	0.50	A-204-70-B-R (10/4/1995)
NO_X (>0.45% nitrogen)*	0.55	A-204-70-B-R (10/4/1995)

Pollutant	lb/hr	Origin and Authority
PM	8.68	A-204-77-10-A (3/21/2017)
PM_{10}	8.68	A-204-77-10-A (3/21/2017)
SO_2	45.14	A-204-77-10-A (3/21/2017)
NO_X (≤0.45% nitrogen)*	43.4	A-204-70-F-R (1/15/2009)
NO_X (>0.45% nitrogen)*	47.7	A-204-70-F-R (1/15/2009)
CO	52.1	A-204-70-F-R (1/15/2009)
VOC	8.7	A-204-70-F-R (1/15/2009)

Table Notes: * Denotes the nitrogen content of the fuel

2. Visible Emissions
   Visible emissions from Stack #4, through which Boilers #5 and #6 exhaust, shall not exceed 30% opacity on a six (6) minute block average basis, except during the startup of one or both boilers, during which time UMaine may elect to comply with the following work practice standards in lieu of this visible emission limit:
   a. UMaine shall record the date, time, and duration of each startup for which UMaine elects to comply with these work practice standards.
   b. UMaine shall operate the boilers in a manner consistent with safety and good air pollution practices for minimizing emissions.
   c. The duration of each startup that is subject to these work practice standards shall not exceed one hour.

   [06-096 C.M.R. ch. 140, BPT]

3. UMaine shall conduct monthly visible emission determinations from stack #4 to demonstrate compliance with the opacity limit as follows:
   a. UMaine shall use the methods set forth in 40 CFR Part 60, Appendix A, Method 9 for visible emissions and shall record the opacity levels in 15 second intervals for at least 18 consecutive minutes.
   b. If any of the three 6-minute block averages observed during the first 18-minute period are above 30% opacity, then the observation period shall be extended to 3 hours.
   c. The personnel performing the observations shall hold current Method 9 visible emission observer certifications.
   d. UMaine shall keep records of the monthly observations for six years.
   e. If in any calendar month only one boiler (either Boiler #5 or Boiler #6) is operated for five consecutive days or less then no visible emissions reading is required for stack #4 for that month. UMaine shall maintain records documenting operating time for Boilers #5 and #6.

   [A-204-70-G-A (1/31/2012)]

C. Control Equipment

Boilers #5 and #6 shall be equipped with oxygen trim systems. UMaine shall keep records of malfunctions associated with the oxygen trim systems and shall include a summary in the semi-annual Part 70 monitoring reports. A malfunction of an oxygen trim system may not constitute a violation of the license if UMaine attempts to return the malfunctioning system to an operational status in an expeditious manner. [A-204-70-F-R, BPT (1/15/2009)]

D. Compliance Methods

Compliance with the emission limits listed above shall be demonstrated in accordance with the following methods and frequencies, or other methods and frequencies as approved by the Department [06-096 C.M.R. ch. 140]:

Pollutant	Units	Compliance Method	Frequency
PM	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 5	As requested
	lb/hr		
PM_{10}	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 5 or EPA Test Method 201 or 201A	As requested
	lb/hr		
SO_2	lb/hr	40 C.F.R. Part 60, App. A, Method 6	As requested
NO_X	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 7	As noted in Specific Condition (15) C. 2.
	lb/hr		
CO	lb/hr	40 C.F.R. Part 60, App. A, Method 10	As requested
VOC	lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
Visible Emissions	Opacity	40 C.F.R. Part 60, App. A, Method 9	Monthly

E. Periodic Monitoring

UMaine shall monitor and record operational values for Boilers #5 & #6 as indicated in the following table whenever the equipment is operating.

Boiler #5 and Boiler #6 (each)			
Monitored Values	**Units**	**Monitoring Tool/Method**	**Frequency**
Combined No. 6 fuel oil firing rate for Boilers #5, #6, and #7	gal/hr	Fuel flow meter	Hourly
No. 6 fuel oil use	Gallons	Recordkeeping	Monthly (per boiler) and 12-month rolling total (Boilers #5, #6, and #7 combined)
No. 6 fuel oil sulfur content	Percent, by weight	Fuel oil analysis receipts from supplier	As supplier's fuel analysis change
No. 6 fuel oil nitrogen content	Percent, by weight	Fuel oil analysis receipts from supplier	As supplier's fuel is analysis change
Used oil use	Gallons	Recordkeeping	Monthly

(17) **Boiler #7 – 86.8 MMBtu/hr**

A. Allowable Fuels

Boiler #7 is licensed to fire No. 6 fuel oil, natural gas, and specification used oil (as defined by the Bureau of Remediation and Waste Management) generated on site. [A-204-70-C-A (1/11/2002), A-204-70-E-A (10/8/2004)]

B. Boiler #7 Emission Limits

1. Emissions from Boiler #7 shall not exceed the following limits when firing No. 6 fuel oil

Pollutant	lb/MMBtu	Origin or Authority
PM	0.10	A-204-77-10-A (3/21/2017)
PM_{10}	0.10	A-204-77-10-A (3/21/2017)
NO_X (≤0.45% nitrogen)*	0.50	A-204-72-D-A (2/20/1996)
NO_X (>0.45% nitrogen)*	0.55	A-204-72-D-A (2/20/1996)

Pollutant	lb/hr	Origin and Authority
PM	8.68	A-204-77-10-A (3/21/2017)
PM_{10}	8.68	A-204-77-10-A (3/21/2017)
SO_2	45.14	A-204-77-10-A (3/21/2017)
NO_X (≤0.45% nitrogen) *	43.4	A-204-70-F-R (1/15/2009)
NO_X (>0.45% nitrogen) *	47.7	A-204-70-F-R (1/15/2009)
CO	52.1	A-204-70-F-R (1/15/2009)
VOC	8.7	A-204-70-F-R (1/15/2009)

* Denotes the nitrogen content in the fuel

2. Emissions from Boiler #7 shall not exceed the following limits when firing natural gas only:

Pollutant	lb/MMBtu	Origin or Authority
PM	0.01	A-204-70-F-R (1/15/2009)
NO_x	0.20	A-204-70-F-R (1/15/2009)

Pollutant	lb/hr	Origin and Authority
PM	0.87	A-204-70-F-R (1/15/2009)
PM_{10}	0.87	A-204-70-F-R (1/15/2009)
SO_2	0.52	A-204-77-10-A (3/21/2017)
NO_X	17.4	A-204-70-F-R (1/15/2009)
CO	13.0	A-204-70-F-R (1/15/2009)
VOC	0.87	A-204-70-F-R (1/15/2009)

3. Visible Emissions
   Emissions from both Boiler #7 and Boiler #8 exhaust through Stack #1.
   a. Visible emissions from Stack #1 when Boiler #7 and Boiler #8 are operating on natural gas shall not exceed 10% opacity on a six (6) minute block average basis
   b. Visible emissions from Stack #1 when Boiler #7 is firing No. 6 fuel oil, operating alone or with Boiler #8, shall not exceed 20% opacity on a six (6) minute block average basis.

   [A-204-77-10-A (3/21/2017)]

4. Control Equipment

   Boiler #7 shall be equipped with an oxygen trim system. UMaine shall keep records of malfunctions associated with the oxygen trim system and shall include a summary in the semi-annual Part 70 monitoring reports. A malfunction of an oxygen trim system may not constitute a violation of the license if UMaine attempts

to return the malfunctioning system to an operational status in an expeditious manner. [A-204-70-F-R, BPT (1/15/2009)]

5. Compliance Methods

a. Compliance with the emission limits listed above shall be demonstrated in accordance with the following methods and frequencies, or other methods and frequencies as approved by the Department [06-096 C.M.R. ch. 140]:

Pollutant	Units	Compliance Method	Frequency
PM	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 5	As requested
	lb/hr		
PM_{10}	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 5 or EPA Test Method 201 or 201A	As requested
	lb/hr		
SO_2	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 6	As requested
	lb/hr		
NO_X	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 7	As noted in Specific Condition (15) C. 2.
	lb/hr		
CO	lb/hr	40 C.F.R. Part 60, App. A, `Method 10	As requested
VOC	lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
Visible Emissions	Opacity	40 C.F.R. Part 60, App. A, Method 9	Monthly

b. UMaine shall conduct monthly visible emission determinations from stack #1 to demonstrate compliance with the opacity limit as follows:
(1) UMaine shall use the methods set forth in 40 CFR Part 60, Appendix A, Method 9 for visible emissions and shall record the opacity levels in 15 second intervals for at least 18 consecutive minutes.
(2) If any of the three 6-minute block averages observed during the first 18-minute period are above the applicable opacity limit (10% or 20% as applicable based on fuel type), then the observation period shall be extended to 3 hours.
(3) The personnel performing the observations shall hold current Method 9 visible emission observer certifications.
(4) UMaine shall keep records of the monthly observations for six years. [A-204-70-F-R (1/15/2009)]

6. Periodic Monitoring

UMaine shall monitor and record values for Boiler #7 as indicated in the following table whenever the equipment is operating.

Boiler #7			
Monitored Value	**Units**	**Monitoring Tool/Method**	**Frequency**
Combined No. 6 fuel oil firing rate for Boilers #5, #6 and #7	gal/hr	Fuel flow meter	Hourly
No. 6 fuel oil use	Gallons	Recordkeeping	Monthly (per boiler) and 12-month rolling total (Boilers #5, #6 and #7 combined)
No. 6 fuel oil sulfur content	Percent, by weight	Fuel oil analysis receipts from supplier	As supplier's analysis changes
No. 6 fuel oil nitrogen content	Percent, by weight	Fuel oil analysis receipts from supplier	As supplier's analysis changes
Used oil usage	Gallons	Recordkeeping	Monthly
Natural gas use	MMBtu	Recordkeeping	Monthly

(18) **Boiler #8 – 75 MMBtu/hr**

A. Allowable Fuels

1. Boiler #8 is licensed to fire natural gas. [A-204-77-10-A (3/21/2017)]
2. UMaine shall maintain records of the quantity of natural gas consumed in Boiler #8 on a monthly basis.
[[A-204-77-10-A (3/21/2017) and 40 C.F.R. Part 60, Subpart Dc, § 60.48c(g)(2)]

B. Boiler #8 Emission Limits

1. Emissions from Boiler #8 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.01	A-204-77-10-A (3/21/2017)
PM_{10}	0.01	A-204-77-10-A (3/21/2017)
NO_X	0.04	A-204-77-10-A (3/21/2017)

Pollutant	lb/hr	Origin and Authority
PM	0.75	A-204-77-10-A (3/21/2017)
PM_{10}	0.75	A-204-77-10-A (3/21/2017)
SO_2	0.45	A-204-77-10-A (3/21/2017)
NO_X	3.0	A-204-77-10-A (3/21/2017)
CO	3.0	A-204-77-10-A (3/21/2017)
VOC	0.75	A-204-77-10-A (3/21/2017)

2. Visible Emissions
Visible emissions from Stack #1 when Boiler #8 is operating on natural gas and Boiler #7 is not in operation shall not exceed 10% opacity on a six (6) minute block average basis.
[A-204-77-10-A (3/21/2017)]

C. Control Equipment

Emissions from Boiler #8 shall be controlled with a low-NO_X burner, flue gas recirculation, and good combustion controls.
[A-204-77-10-A (3/21/2017)]

D. Compliance with the emission limits associated with Boiler #8 shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

E. Periodic Monitoring

UMaine shall monitor and record operational values for Boiler #8 as indicated in the following table whenever the equipment is operating.

Boiler #8			
Monitored Value	**Units**	**Monitoring Tool/Method**	**Frequency**
Natural gas use	MMBtu	Recordkeeping	Monthly

F. 40 C.F.R. Part 60, Subpart Dc

1. UMaine shall record and maintain records of the amount natural gas combusted during each calendar month. meet all the applicable requirements of 40 C.F.R. Part 60, Subpart Dc, including notifications submittals and maintaining records.
2. UMaine is not required to submit the semi-annual reports referenced in 40 C.F.R. Part 60, § 60.48c(j) and as detailed in A-204-77-6-M (6/18/2013).

[40 C.F.R. Part 60, § 60.48c(g)(2) &A-204-77-6-M (6/18/2013)]

(19) **Global Science Boilers #1 and #2**

A. Allowable Fuels

1. Global Science Boilers #1 and #2 are licensed to fire natural gas. [A-204-70-D-A (5/22/2003)]
2. UMaine shall maintain records of the quantity of fuel consumed in each boiler on a monthly basis. [A-204-70-D-A (5/22/2003)]

B. Global Science Boilers #1 and #2 Emission Limits

1. Emissions from the boilers shall not exceed the following limits:

Emission Units	Pollutant	lb/MMBtu	Origin and Authority
Global Science Boiler #1	PM	0.05	06-096 C.M.R. ch. 140, BPT
Global Science Boiler #2	PM	0.05	06-096 C.M.R. ch. 140, BPT

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Global Science Boiler #1	0.22	0.22	0.01	0.43	0.36	0.02
Global Science Boiler #2	0.22	0.22	0.01	0.43	0.36	0.02

[06-096 C.M.R. ch. 140, BPT]

2. Visible emissions from Global Science Boilers #1 and #2 shall each not exceed 10% opacity on a six (6) minute block average basis. [06-096 C.M.R. ch. 140, BPT]

C. Compliance Methods

Compliance with the emission limits associated with Global Science Boilers #1 and #2 shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

D. Periodic Monitoring

UMaine shall monitor and record values for Global Science Boilers #1 and #2 as indicated in the following table whenever the equipment is operating.
[06-096 C.M.R. ch. 140, BPT]

Monitored Value	Units	Monitoring Tool/Method	Frequency
Natural gas use	MMBtu	Billing records from gas utility	Monthly

(20) **Small Boilers and Furnaces** (< 3.2 MMBtu/hour)

A. Allowable Fuels

The following are licensed to fire natural gas:
- Service Building A – Room 161M - #1 Boiler,
- Service Building A – Room 161M - #2 Boiler,
- Alfond Arena – East Mechanical Room Boiler,
- Alfond Arena – West Mechanical Room Boiler,
- Libby Hall Boiler, and
- Keyo Building – PICS Boiler
- The Sawyer Environmental Research Center Boiler,
- Alfond Arena – East and West Pad Furnace/Dehumidifiers, and
- Mahaney Dome Furnace.
  [06-096 C.M.R. ch. 140, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Keyo Building	PM	0.05	06-096 C.M.R. ch. 140, BPT

C. Emission Limits

1. Emissions from the boilers and furnaces shall not exceed the following limits [06-096 C.M.R. ch. 140, BPT]:

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Service Building A – Room 161M - #1 Boiler	0.02	0.02	0.01	0.26	0.22	0.01
Service Building A – Room 161M - #2 Boiler	0.02	0.02	0.01	0.26	0.22	0.01
Alfond Arena – East Mechanical Room Boiler	0.01	0.01	0.01	0.17	0.14	0.01
Alfond Arena – West Mechanical Room Boiler	0.01	0.01	0.01	0.17	0.14	0.01
Libby Hall Boiler	0.02	0.02	0.01	0.27	0.23	0.01
Keyo Building – PICS Boiler	0.02	0.02	0.01	0.30	0.25	0.02
Sawyer Environmental Research Center Boiler	0.02	0.02	0.01	0.24	0.20	0.01
Alfond Arena – East Pad Furnace/Dehumidifier	0.02	0.02	0.01	0.24	0.20	0.01
Alfond Arena – West Pad Furnace/ Dehumidifier	0.02	0.02	0.01	0.24	0.20	0.01
Mahaney Dome Furnace	0.02	0.02	0.01	0.21	0.18	0.01

2. Visible Emissions
Visible emissions from any small boiler or furnace when firing natural gas shall not exceed 10% opacity on a six (6) minute block average basis.
[06-096 C.M.R. ch. 140, BPT]

D. Compliance Methods

Compliance with the emission limits associated with the small boilers and furnaces rated less than 3.2 MMBtu/hr shall be demonstrated in accordance with the appropriate test methods upon request of the Department.

(21) **40 C.F.R. Part 63, Subpart JJJJJJ** - *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*

A. UMaine shall meet all applicable requirements in 40 C.F.R. Part 63, Subpart JJJJJJ.

B. A summary of the currently applicable federal 40 C.F.R. Part 63, Subpart JJJJJJ requirements is listed below.

1. Boiler Tune-Up Program

a. Implementation of a boiler tune-up program which includes the initial tune-up of the applicable boilers. [40 C.F.R. Part 63.11196(a)(1)]

b. Each subsequent tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below: [40 C.F.R. Part 63.11223(a) and Table 2]

Boiler Name	**Boiler Category**	**Tune-Up Frequency**
Boiler #5	Existing Oil Boiler Equipped with an oxygen trim system	Every 5 years
Boiler #6	Existing Oil Boiler Equipped with an oxygen trim system	Every 5 years
Boiler #7 ***(dual fired unit)***	Existing Oil Boiler Equipped with an oxygen trim system	*Every 5 years
Navy ROTC Boiler	With a heat input capacity of <5MMBtu/hr	Every 5 years

*Not required if operated as a gas-fired boiler

c. Any dual fueled boilers meeting the definition of "gas-fired boiler" are not subject to this regulation or to the tune-up requirement listed above. [40 C.F.R. Part 63.11195(e) and Table 2]

d. 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, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [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, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [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)]

2. Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:
   a. 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;
   b. A description of any corrective actions taken as part of the tune-up of the boiler; and
   c. 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)]

3. Compliance Report

   A compliance report shall be prepared by March 1st every five years which covers the previous five calendar years. 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:
   - "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."
   - "No secondary materials that are solid waste were combusted in any affected unit."
   - "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."

4. Recordkeeping
Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63 Subpart JJJJJJ including the following: copies of notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review. [40 C.F.R. Part 63.11225(c)]

(22) **Emergency Generators and Engines** (All engines/generator units except the Recreation Center, Hilltop Commons, and Collins Center Generators)

A. Allowable Operation and Fuels

1. The following emergency generators are licensed to fire distillate fuel:
   - Portable Generator #1 (Model 3306B) and #2 (Model 3406C),
   - Hitchner Hall,
   - Aubert Hall,
   - Barrows Hall,
   - Alfond Arena,
   - Wells Commons Generator,
   - Neville Hall Telecom
   - Neville Hall Data Center, and
   - Aquaculture Research Center.

[06-096 C.M.R. ch. 140, BPT, A-204-70-D-A (5/22/2003), A-204-77-4-A (7/19/2011), A-204-77-5-A, (10/12/2011), and A-204-77-11-A (5/28/2018)]

2. The Memorial Gym, Mahaney Dome, and Sawyer Ice Core Freezer emergency generators/engines are licensed to fire natural gas.
   [06-096 C.M.R. ch. 140, BPT and A-204-77-7-A (8/19/2013)]
3. The following emergency generators are licensed to fire propane.
   - The Cutler Health Center,
   - Murray Hall,
   - Class of 1944 Hall,
   - Public Safety,
   - Facilities Mgt. – HVAC Shop,
   - Central Steam Plant,
   - Hancock Hall,
   - Alfond Sports Stadium, and
   - Estabrooke Hall Generator

   [06-096 C.M.R. ch. 140, BPT and A-204-77-12-M (10/23/2018)]]
4. The York Hall emergency generator are licensed to fire propane and/or natural gas separately. [A-204-77-9-A (2/1/2016)]
5. The generators are each limited to 100 hours per year of non-emergency operation based on a calendar year.
   [06-096 C.M.R. ch.140]

B. Fuel Sulfur Content

1. The sulfur content for the emergency generators/engines licensed to fire distillate fuel shall be limited to 0.0015% sulfur by weight.
   [06-096 C.M.R. ch. 140, BPT]
2. Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 C.M.R. ch. 140, BPT]

C. Emissions shall not exceed the following limits for engines greater than 3 MMBtu/hr:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Portable Generator #2 (Model 3406C)	PM	0.12	06-096 C.M.R. ch. 103, (2)(B)(1)(a)
Hitchner Hall	PM	0.12	06-096 C.M.R. ch. 103, (2)(B)(1)(a)
Aubert Hall	PM	0.12	06-096 C.M.R. ch. 103, (2)(B)(1)(a)
Barrows Hall	PM	0.12	06-096 C.M.R. ch. 103, (2)(B)(1)(a)
Alfond Arena	PM	0.03	A-204-77-4-A (7/19/2011)
Neville Hall Data Center	PM	0.02	A-204-77-5-A (10/12/2011)
Memorial Gym	PM	0.0095	A-204-77-7-A (8/19/2013)
Wells Common	PM	0.02	A-204-77-11-A (5/24/2018)

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Portable Generator #2 (Model 3406C)	0.43	0.43	0.01	8.17	1.87	0.10
Hitchner Hall	0.49	0.49	0.01	9.08	4.16	0.10
Aubert Hall	0.38	0.38	0.01	9.29	2.80	0.16
Barrows Hall	0.38	0.38	0.01	9.29	2.80	0.16
Alfond Arena	0.10	0.10	0.005	2.89	0.68	0.08
Neville Hall Data Center	0.13	0.13	0.012	17.02	1.13	0.15
Memorial Gym	0.03	0.03	0.002	0.03	0.44	0.32
Wells Common	0.08	0.08	0.01	8.17	1.93	0.07

D. Emissions shall not exceed the following limits for engines less than 3 MMBtu/hr subject to NSR license limits:

Equipment	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
York Hall	0.02	0.02	0.01	1.18	18.82	0.18
Estabrooke Hall	0.02	0.02	--	0.18	14.16	0.21

[A-204-77-9-A (2/1/2016) and A-204-77-12-M (10/23/2018)]

E. Visible Emissions
   1. Visible emissions from each of the distillate fuel fired generators, except for the Wells Commons Generator, shall not exceed 20% opacity on a 6-minute block average.
      [06-096 C.M.R. ch. 140, BPT]
   2. Visible Emissions from the Wells Commons Generator shall not exceed 10% opacity on a 6-minute block average basis.
      [A-204-77-11-A (5/24/2018)]
   3. Visible emissions from each of the natural gas and propane fired generators shall not exceed 10% opacity on a 6-minute block average basis.
      [06-096 C.M.R. ch. 140, BPT]

F. UMaine shall control NO_x emissions from the Memorial Gym Generator by use of non-selective catalytic reduction (NSCR) with a three-way catalyst. UMaine shall maintain the control equipment according to the manufacturer's recommended instructions.
   [A-204-77-7-A (8/19/2013)]

G. The emergency engines/generators shall not participate in any peak shaving or load reduction programs.
   [40 C.F.R. Part 60, Subparts IIII and JJJJ and 40 C.F.R. Part 63, Subpart ZZZZ]

H. The emergency engines/generators (excluding the Alfond Arena, Neville Hall Data Center, Wells Commons, Memorial Gym, Public Safety Generators, York Hall and Estabrooke Hall) shall be operated such that each meets the conditions below:

1. UMaine shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency.
   [06-096 C.M.R. ch. 140, BPT]

2. 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 used to supply power to an electric grid as part of a financial arrangement with an independent system operator (ISO) or another entity.

I. The Alfond Arena, Neville Hall Data Center, and the Wells Commons Generators shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

1. Manufacturer Certification
   The Alfond Arena, Neville Hall Data Center, and Wells Commons Generators shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in § 60.4202. [40 C.F.R. § 60.4205(b)]

2. Ultra-Low Sulfur Distillate Fuel
   The distillate fuel fired in the Alfond Arena, Neville Hall Data Center, and Wells Commons Generators shall not exceed 15 ppm sulfur by weight (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 C.F.R. § 60.4207(b)]

3. Non-Resettable Hour Meter
   A non-resettable hour meter shall be installed and operated on the Alfond Arena, Neville Hall Data Center, and Wells Commons Generators.
   [40 C.F.R. § 60.4209(a)]

4. Annual Time Limit for Maintenance and Testing
   a. The Alfond Arena, Neville Hall Data Center, and Wells Commons Generators shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency

demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in § 60.4211(f)(3)(i) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written or electronic log of all generator operating hours. [40 C.F.R. § 60.4211(f)]

b. UMaine shall keep records that include maintenance conducted on the Alfond Arena, Neville Hall Data Center and Wells Commons Generators and UMaine shall keep records of the operation of each of these engines in emergency and non-emergency service that are recorded through non-resettable hour meter. Documentation shall include the time of operation of the engine and the reason the engine was in operation. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance
The Alfond Arena, Neville Hall Data Center, and Wells Commons Generators shall be operated and maintained according to the manufacturer's emission-related written instructions. UMaine may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

J. The Memorial Gym, Public Safety Generators, York Hall, and Estabrooke Hall Generators shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ, including the following:

1. Manufacturer Certification
The Memorial Gym Generator shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1.

The York Hall, Public Safety, and Estabrooke Hall Generator shall be certified by the manufacturer to the Phase 1 standards contained in 40 C.F.R. Part 90.

2. Non-Resettable Hour Meter
A non-resettable hour meter shall be installed and operated on the Generators. [40 C.F.R. § 60.4237]

3. Annual Time Limit for Maintenance and Testing
a. The Generators shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in § 60.4243(d)(3)(i) are met). The limits are based on a calendar year. Compliance shall be demonstrated by a written or electronic log of all generator operating hours. [40 C.F.R. § 60.4243(d)]

b. UMaine shall keep records that include maintenance conducted on the Generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency.
[40 C.F.R. § 60.4245 (b)]

4. Operation and Maintenance
The Generators shall be operated and maintained according to the manufacturer's emission-related written instructions. UMaine may only change those settings that are permitted by the manufacturer.
[40 C.F.R. § 60.4243]

K. Periodic Monitoring
UMaine shall monitor and record values for each emergency generator or engine as indicated in the following table.

Monitored Values	Units of Measure	Monitoring Tool/Method	Frequency Monitor/Record
Fuel sulfur content	Percent, by weight	Fuel delivery records from supplier	As fuel is delivered
Operating time	Hours	Hour Meter	Annually
Type of Operation (emergency, maintenance, etc.)	N/A	Logbook or electronic record such as spreadsheet	As it occurs, written or electronic log updated at least monthly

(23) **Non-Emergency Generators** (Recreation Center, Hilltop Commons, and Collins Center Generators)

A. Allowable Operation and Fuels

1. The Recreation Center, Hilltop Commons, and Collins Center Generators are licensed to fire distillate fuel.
[A-204-77-1-A (7/1/2008), A-204-77-2-A (10/29/2008)]
2. The generators are each limited to 500 hours per year total operation, based on a 12-month rolling total.
[A-204-77-1-A (7/1/2008), A-204-77-2-A (10/29/2008)]

B. Fuel Sulfur Content

1. The distillate fuel sulfur content for the non-emergency generators shall be limited to 0.0015% sulfur by weight. [40 C.F.R. § 60.4207(b)]
2. Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 C.M.R. ch. 140, BPT]

C. Emissions shall not exceed the following limits:

Emission Units	Pollutant	lb/MMBtu	Origin and Authority
Recreation Center	PM	0.12	06-096 C.M.R. ch. 103, Section (2)(B)(1)(a)
Hilltop Commons	PM	0.12	06-096 C.M.R. ch. 103, Section (2)(B)(1)(a)
Collins Center	PM	0.12	06-096 C.M.R. ch. 103, Section (2)(B)(1)(a)

Emission Units	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Recreation Center Generator	0.55	0.55	0.01	5.93	0.80	0.12
Hilltop Commons Generator	0.70	0.70	0.01	11.72	0.95	0.13
Collins Center Generator	0.49	0.49	0.01	5.21	1.47	0.09

[A-204-77-1-A (7/1/2008), A-204-77-2-A (10/29/2008)]

D. Visible emissions from each of the distillate fuel fired non-emergency generators shall not exceed 20% opacity on a 6-minute block average basis.
[06-096 C.M.R. ch. 140, BPT]

E. The Recreation Center, Hilltop Commons, and Collins Center Generators shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII and 40 C.F.R. Part 63, Subpart ZZZZ, including the following:

1. 40 C.F.R. Part 60, Subpart IIII Requirements

a. Manufacturer Certification Requirement

(1) The Recreation Center Generator shall meet the emission standards found in 40 C.F.R. Part 60, Subpart IIII, Table 1. UMaine shall demonstrate compliance by maintaining documentation showing the Generator's engine is certified to the applicable emissions standards in 40 C.F.R. Part 89.
[40 C.F.R. § 60.4204(a) and 40 C.F.R. § 60.4211(b)(1)]

(2) The Hilltop Commons and Collins Center Generators shall be certified by the manufacturer as meeting the emission standards found in 40 C.F.R. Part 89. [40 C.F.R. § 60.4211(c)]

b. Ultra-Low Sulfur Distillate Fuel Requirement

The distillate fuel fired in the generators shall not exceed 15 ppm sulfur by weight (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)]

c. Operation and Maintenance Requirements

The generators shall be operated and maintained according to the manufacturer's emission-related written instructions. UMaine may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

If the generators are not operated and maintained according to the manufacturer's emission-related written instructions or changes are made to the emission-related settings in a way that is not permitted by the manufacturer, UMaine shall demonstrate compliance with the emission limits according to § 60.4211(g)(3). To demonstrate compliance UMaine shall conduct an initial performance test within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

2. 40 C.F.R. Part 63, Subpart ZZZZ

The Recreation Center Generator shall meet the requirement for a Tier 3 engine under 40 C.F.R. Part 60 Subpart IIII. [40 C.F.R. § 63.6603(e)]

F. Periodic Monitoring

UMaine shall monitor and record the values as indicated in the following table for each non-emergency generator.

Monitored Values	Units of Measure	Monitoring Tool/Method	Frequency	
			Monitor	Record
Fuel sulfur content	Percent, by weight	Fuel delivery records from supplier	As fuel is delivered	
Operating time	Hours	Hour Meter	Annually	

(24) **Printing Services Department**

A. UMaine shall be limited to 2.0 tons per year of VOC from the printing services department. [A-204-70-F-R (1/15/2009)]

B. UMaine shall maintain records of all chemical usage in the Printing Services Department. Records shall be kept on a calendar year basis and shall include for each chemical: the amount used, the VOC content, and the HAP percentage.
[A-204 70- F-R (1/15/2009)]

(25) **Parts Washer**

The parts washer at the Steam Plant is subject to *Solvent Cleaners*, 06-096 C.M.R. ch. 130.

A. UMaine shall keep records of the amount of solvent added to the parts washer. [06-096 C.M.R. ch. 130]

B. The following are exempt from the requirements of 06-096 C.M.R. ch. 130 [06-096 C.M.R. ch. 130]:
   1. Solvent cleaners using less than two liters (68 oz) of cleaning solvent with a vapor pressure of 1.00 mmHg, or less, at 20° C (68° F);
   2. Wipe cleaning; and,
   3. Cold cleaning machines using solvents containing less than or equal to 5% VOC by weight.

C. The following standards apply to cold cleaning machines that are subject to 06-096 C.M.R. ch. 130:
   UMaine shall attach a permanent conspicuous label to each unit summarizing the following operational standards [06-096 C.M.R. ch. 130]:
   1. Waste solvent shall be collected and stored in closed containers.
   2. Cleaned parts shall be drained of solvent directly back to the cold cleaning machine by tipping or rotating the part for at least 15 seconds or until dripping ceases, whichever is longer.
   3. Flushing of parts shall be performed with a solid solvent spray that is a solid fluid stream (not a fine, atomized, or shower type spray) at a pressure that does not exceed 10 psig. Flushing shall be performed only within the freeboard area of the cold cleaning machine.
   4. The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
   5. Sponges, fabric, wood, leather, paper products, and other absorbent materials shall not be cleaned in the parts washer.
   6. When a pump-agitated solvent bath is used, the agitator shall be operated to produce no observable splashing of the solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used.

7. Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
8. Work area fans shall not blow across the opening of the washer unit.
9. The solvent level shall not exceed the fill line.

(26) **Gasoline Storage Tank**

A. The fill pipe shall extend within six inches of the bottom of the gasoline storage tank. [06-096 C.M.R. ch. 118]

B. The licensee shall maintain records of the monthly and annual throughput of gasoline. [06-096 C.M.R. ch 118]

C. UMaine shall not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, minimizing gasoline spills, cleaning up spills as expeditiously as practicable, covering all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use, and minimizing gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators. [40 C.F.R. Part 63, Subpart CCCCC, § 63.11116(a)]

(27) **HAP Emissions**

A. HAP emissions shall not exceed:
   1. A facility wide limit of 9.9 tons per year of any one HAP based on a calendar year total.
   2. A facility wide limit of 24.9 tons per year of total HAP based on a calendar year total.

B. The records and calculations documenting compliance with the above limits for HAP shall be based on emission factors, chemical use and HAP content information from Safety Data Sheets or manufacturer information. Compliance with these HAP limits shall be based on the HAP emission from the emission sources that are addressed in this license.

C. If HAP emissions reported required by 06-096 C.M.R ch. 137 are greater than 5 tons per year for any one HAP or greater than 12.5 tons per year of all the HAP then UMaine shall calculate HAP emissions annually, otherwise, UMaine may utilize the HAP emissions reported in its most recently submitted Chapter 137 emissions statement to demonstrate compliance with the HAP limits.
[06-096 C.M.R. ch 140, BPT]

(28) **Fugitive Emissions**

A. Fugitive Emissions prior to January 1, 2020:
Visible emissions from a fugitive emission source shall not exceed an opacity of 20 percent, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour.
[06-096 C.M.R. ch. 101 § 3(C)]

B. Visible Emission Standards Effective January 1, 2020 and thereafter
Visible emissions from a fugitive emission source shall not exceed an opacity of 20 percent, on a five (5) minute block average basis.
[06-096 C.M.R. ch. 101 § 3(C)]

(29) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six-minute block average basis. [06-096 C.M.R. ch. 140, BPT]

(30) **Semiannual Reporting** [06-096 C.M.R. ch. 140]

A. The licensee shall submit to the Bureau of Air Quality semiannual reports which are due on **January 31st** and **July 31st** of each year. The facility's designated responsible official must sign this report.
B. The semiannual report shall be considered on-time if the postmark of the submittal is before the due date or if the report is received by the Department within seven calendar days of the due date.
C. Each semiannual report shall include a summary of the periodic monitoring required by this license.
D. All instances of deviations from license requirements and the corrective action taken must be clearly identified and provided to the Department in summary form for each six-month interval.

(31) **Annual Compliance Certification**

UMaine shall submit an annual compliance certification to the Department and EPA in accordance with Standard Condition (13) of this license. The annual compliance certification is due January 31st of each year. The facility's designated responsible official must sign this report.

The annual compliance certification shall be considered on-time if the postmark of the submittal is before the due date or if the report is received by the Department within seven calendar days of the due date. Certification of compliance is to be based on the stack testing or monitoring data required by this license. Where the license does not require such data, or the license requires such data upon request of the Department and the Department has

not requested the testing or monitoring, compliance may be certified based upon other reasonably available information such as the design of the equipment or applicable emission factors.
[06-096 C.M.R. ch. 140]

(32) **Annual Emission Statement**

A. UMaine is subject to emissions inventory requirements contained in *Emission Statements*, 06-096 C.M.R. ch. 137. UMaine shall maintain the following records in order to comply with this rule:

1. The amount of each fuel fired in Boiler #5, #6, #7, #8, the Global Science Boilers #1 and #2 (each) on a monthly basis;
2. The sulfur content of the No. 6 fuel fired in Boilers #5, #6, #7;
3. The combined amount of natural gas fired on an annual basis in "Small Boilers (< 3.2 MMBtu/hr)" as listed in the emissions inventory reporting program;
4. The amount of each fuel fired or the number of hours of operation and the sulfur content of the distillate fired (if applicable) in the following generators on a monthly basis:
   - Portable Generator #2 (Model 3406C)
   - Hitchner Hall Generator
   - Aubert Hall Generator
   - Barrows Hall Generator
   - Alfond Arena Generator
   - Neville Hall Data Center Generator
   - Wells Commons Generator
   - Memorial Gym Generator;
5. The amount of fuel fired in or the number of hours of operation of generators designated as "Small Generators (< 3 MMBtu/hr) firing natural gas or propane" as listed in the emissions inventory reporting program.
6. The amount of fuel fired or the number of hours of operation and the sulfur content of the distillate fired in the generators designated as "Small Generators (< 3 MMBtu/hr) firing distillate" as listed in the emissions inventory reporting program on a monthly basis;
7. Calculations of the VOC and/or HAP emissions from Printing Services on a calendar year total basis; and
8. Hours of operation for each specifically listed emission unit.

B. In reporting year 2020 and every third year thereafter, UMaine shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). The Department will use these reports to calculate and invoice for the applicable annual air quality surcharge for the subsequent three billing periods. UMaine shall pay the annual air quality surcharge, calculated by the Department based

on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

(33) **General Applicable State Regulations**

The licensee is subject to the State regulations listed below.

Origin and Authority	Requirement Summary	Enforceability
06-096 C.M.R. ch. 102	Open Burning	-
06-096 C.M.R. ch. 109	Emergency Episode Regulation	-
06-096 C.M.R. ch. 110	Ambient Air Quality Standard	-
06-096 C.M.R. ch. 116	Prohibited Dispersion Techniques	-
38 M.R.S. § 585-B, §§5	Mercury Emission Limit	Enforceable by State-only

(34) **Units Containing Ozone Depleting Substances**

When repairing, or disposing of units containing ozone depleting substances, the licensee shall comply with the standards for recycling and emission reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for motor vehicle air conditioning units in Subpart B. Examples of such units include refrigerators and any size air conditioners that contain CFCs. [40 C.F.R. Part 82, Subpart F]

(35) **Asbestos Abatement**

When undertaking Asbestos abatement activities, UMaine shall comply with the *Standard for Asbestos Demolition and Renovation,* 40 C.F.R. Part 61, Subpart M.

(36) **Expiration of a Part 70 license**

A. UMaine shall submit a complete Part 70 renewal application at least six but no more than 18 months prior to the expiration of this air license.

B. Pursuant to Title 5 M.R.S. §10002, and 06-096 C.M.R. ch. 140, the Part 70 license shall not expire and all terms and conditions shall remain in effect until the Department takes final action on the renewal application of the Part 70 license. An existing source submitting a complete renewal application under 06-096 C.M.R. ch. 140 prior to the expiration of the Part 70 license will not be in violation of operating without a Part 70 license. **Enforceable by State-only**

(37) **New Source Review**

UMaine is subject to all previous New Source Review (NSR) requirements summarized in this Part 70 air emission license, and the NSR requirements remain in effect even if this 06-096 C.M.R. ch. 140 Air Emissions License, A-204-70-J-R/A, expires.

DONE AND DATED IN AUGUSTA, MAINE THIS 2nd DAY OF December , 2019

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for
GERALD D. REID, COMMISSIONER

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

[Note: If a complete renewal application, as determined by the Department, is submitted at least six but no more than 18 months prior to expiration of the facility's Part 70 license, then pursuant to Title 5 M.R.S. §10002, all terms and conditions of the Part 70 license shall remain in effect until the Department takes final action on the Part 70 license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 7/11/2013
Date of application acceptance: 7/11/2013
Date filed with the Board of Environmental Protection:
This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

Filed
DEC 2 2019
State of Maine
Board of Environmental Protection