



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**Naval Computer and
Telecommunications Area Master
Station Atlantic Detachment Cutler
Washington County
Cutler, Maine
A-210-77-1-A**

**Departmental
Findings of Fact and Order
New Source Review
NSR #1**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

FACILITY	Naval Computer and Telecommunications Area Master Station Atlantic Detachment (NCTAMS LANT DET)
LICENSE TYPE	06-096 CMR 115, Minor Modification
NAICS CODES	9711 National Security (Federal Facility) 4911 Electrical Power Generation 3443 Oil Storage Tanks
NATURE OF BUSINESS	Naval communications, electricity generation, space heating
FACILITY LOCATION	Route 191, Cutler, Maine

Naval Computer and Telecommunications Area Master Station Atlantic Detachment (NCTAMS LANT DET, the Cutler facility, or Cutler) uses diesel engines to generate electricity to operate communications equipment and to provide energy for space heating requirements.

The Cutler facility has the potential to emit more than 100 tons per year (TPY) each of nitrogen oxides (NO_x) and carbon monoxide (CO); therefore, the source is a major source for these criteria pollutants. Cutler 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. Amendment Description

In an application dated March 3, 2011, Cutler applied to license a modification to the facility to include three new natural gas-fired (spark ignition) generators, a

distillate fuel-fired fire pump engine, and the reconstruction of four existing electricity generating units. Supplemental information was provided in a submittal dated June 24, 2013, which also included the replacement of the 6.4 MMBtu/hour boiler with two 3 MMBtu/hour boilers.

Cutler has also requested that the Building 100 boiler, identified in previous licenses as VLF-100-B#15 (Boiler #15) be included in their air emission license. This boiler provides facility heat to Building 100 and was addressed in the facility's initial Part 70 air emission license (2002). Boiler #15 was omitted from the Part 70 license renewal (2012) because the boiler's size is below the licensing threshold as identified in 06-096 CMR 140. Since that time, however, federal regulations have been promulgated which are applicable to Boiler #15; thus, it is being included in this NSR license.

C. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

Equipment	Max. Capacity (MMBtu/hr)	Max. Firing Rate (gal/hr)	Fuel Type (% sulfur)	Dates		Stack
				Manuf.	Install.	
VLF-103-B#7	3.0	27.5	Distillate fuel (0.0015%)	2012	6/2013	VLF-7
VLF-103-B#8	3.0	27.5				
VLF-100-B#15	2.6	18.8		2000	2000	

Stationary Internal Combustion Engines (SICE)

Emission Unit ID	Heat* Input, MMBtu/hr	Unit Output, kW	Unit Type	Fuel (% sulfur)	Dates		
					Manuf.	Install.	Out of Service/ Overhaul
VLF-103-D#2	32.0	3000	Electrical Generation, Non- Emergency	Distillate fuel (0.0015%)	1975	1976	6/2009-1/2010
VLF-103-D#3	32.0	3000					11/2013-6/2015 (expected)
VLF-103-D#4	32.0	3000					4/2010-10/2013
VLF-103-D#5	32.0	3000					11/2013-6/2014
VLF-123-01	0.80	80					Fire Pump
VLF-135-01	0.50	50	Emergency Engine	Natural gas (negligible)	11/2003	7/2004	N.A.
VLF-130-01	0.35	35					
VLF-503-01	0.80	80					

* Heat input was derived using known generator outputs, 138,000 Btu/gallon of diesel fuel, and an engine efficiency of 32%.

New Source Review licenses are issued in Maine under the authority of 06-096 CMR 115, *Major and Minor Source Air Emission License Regulations*. This rule's Appendix B, *Insignificant Activities*, Section B, defines stationary internal combustion engines with a maximum design heat input of less than 0.5 MMBtu/hour as "Insignificant Based on Size"; thus, such units are to be listed on the license application but may not be included in the license, though they may still be subject to applicable requirements of 06-096 CMR 101 and 103 and applicable federal requirements.

A correction of the Parts Washer capacity is also included in this NSR license. The capacity of the Building 103 main deck Parts Washer, identified in air emission license A-210-70-D-R (2012) as 30 gallons, is actually 2 gallons.

D. Application Classification

The application for inclusion of the previously unlicensed equipment, the reconstruction/overhaul of the existing electricity generating units, and the replacement of one boiler with two smaller boilers does not violate any applicable federal or state requirements and does not reduce required monitoring, reporting, testing, or recordkeeping. This application includes a Best Available Control Technology (BACT) analysis performed per New Source Review (NSR).

The increase of emissions from new emission units at a major source, including overhauled or previously unlicensed units, is identified as major or minor based on whether or not expected emission increases exceed the "Significant Emission Increase" levels as defined in 06-096 CMR 100, *Definitions Regulation*. The emissions increases for new sources are determined by the maximum future license allowed emissions, as follows:

Pollutant	Increase in Emissions from...				Total Increases	Significant Level
	Rebuilt Units	Emergency Units	One of Two New Boilers*	Boiler #15		
PM	0.0	0.1	1.58	0.2	1.88	25
PM ₁₀	0.0	0.1	1.58	0.2	1.88	15
PM _{2.5}	0.0	0.1	1.58	0.2	1.88	10
SO ₂	0.0	negligible	0.02	0.02	0.04	40
NO _x	0.0	2.1	2.41	1.7	6.21	40
CO	0.0	0.3	0.61	0.4	1.31	100
VOC	0.0	0.1	0.04	0.03	0.17	40
CO _{2e}	0.0	67	2744	1876	4687	75,000

* Only one of Boilers VLF-103-B#7 and VLF-103-B#8 will normally be operating at one time, so emissions from only one of the new units was

included in this table. The other boiler will be used as a back-up unit. The values in this table represent maximum license allowed emissions for the units new to the license.

Note: The numbers in the table above are for VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, VLF-103-D#5, VLF-135-01, VLF-503-01, VLF-123-01, VLF-103-B#7, VLF-103-B#8, and VLF-100-B#15 only. No other equipment at the facility is affected by this NSR license.

The changes addressed in this NSR license are determined in total to comprise a minor modification to the source under *Minor and Major Source Air Emission License Regulations* 06-096 CMR 115 (as amended), since the changes being made are not addressed or prohibited in the Part 70 air emission license.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction to BPT and BACT

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications, including reconstructed, replacement, and previously unlicensed units, requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Facility Description

NCTAMS LANT DET is licensed to operate emission sources associated with their naval computer and communications center in Cutler, Maine. The license includes the High Frequency (HF) Antenna Array Area; the Very Low Frequency (VLF) Antenna Array Site, which includes the VLF Power Plant and the VLF Transmitter Area; and a fire station designated as Building 503. The Cutler facility is an active Naval Computer and Telecommunications Station staffed by civilian government workers for the operation of HF and VLF transmitters, providing HF and VLF communications to the operating forces of the Atlantic Fleet and Northeast Region Shore Commands. Emissions sources at the Cutler facility generate electricity from distillate fuel-fired generators and produce heat for space heating requirements.

C. Boilers: VLF-103-B#7, VLF-103-B#8, and VLF-100-B#15 (Boiler #15)

1. Boiler Descriptions

a. Boilers B#7 and B#8

Package boilers VLF-103-B#7 and VLF-103-B#8 (B#7 and B#8) replace existing boiler VLF-103-B#6 (B#6). Boilers B#7 and B#8 fire distillate fuel with a maximum sulfur content of 0.0015% by weight.

Boiler VLF-103-B#6 has been dismantled and removed from the site, and Cutler has requested its removal from the facility's Part 70 air emission license.

Boilers B#7 and B#8 support facility heating needs. The new package boilers both exhaust through existing Stack VLF-7, the stack formerly associated with boiler B#6. This stack releases at 16.15 meters (53 ft) above ground level and has an inside diameter of 0.457 meter (1.5 ft). Boilers B#7 and B#8 will normally operate one at a time, with the other available as back-up. At any one time, Cutler shall operate either B#7 or B#8 but not both, except during periods when one of the two is being brought off-line and the other is being brought on-line. Both boilers B#7 and B#8 may be operated concurrently only when none of the non-emergency generators VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5 are in operation.

b. Boiler #15

Cutler operates Boiler VLF-100-B#15 to provide heat for Building 100. Boiler #15 was manufactured by Weil-McLean with a maximum design heat input capacity of 2.6 MMBtu/hour firing distillate fuel with sulfur content not to exceed 0.0015% by weight (15 ppm). The boiler was manufactured and installed in 2000. Emissions exit through a 19.6 foot stack.

1. New Source Performance Standards (NSPS)

Boilers B#7, B#8, and #15 are not subject to NSPS 40 CFR Part 60, Subpart Dc – *Standards of Performance for Boilers Manufactured after June 9, 1989*, because they each have a maximum heat input of less than 10 MMBtu/hour. [40 CFR §60.40c]

2. NO_x RACT

Potential NO_x emissions from each boiler B#7, B#8, and Boiler #15 are less than 10.0 tons per year; therefore, these units are exempt from NO_x RACT requirements. [06-096 CMR 138 (1)(B)(1)]

3. BACT Findings

The BACT emission limits for B#7, B#8, and Boiler #15 firing distillate fuel are based on the following:

PM, PM ₁₀ , PM _{2.5}	– Boilers B#7 and B#8: 0.12 lb/MMBtu; 06-096 CMR 103 Boiler #15: 2 lb/1000 gal; AP-42, Table 1.3-1 (5/10)
SO ₂	– 0.0015 lb/MMBtu; based on firing 0.0015% sulfur distillate fuel
NO _x	– 20 lb/1000 gal; AP-42, Table 1.3-1 (5/10)
CO	– 5 lb/1000 gal; AP-42, Table 1.3-1 (5/10)
VOC	– 0.34 lb/1000 gal; AP-42, Table 1.3-3 (5/10)
Visible Emissions	– 06-096 CMR 101 (2)(B)(1)(b)

The BACT emission limits for these boilers are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler B#7	0.36	0.36	0.36	0.005	0.55	0.14	0.01
Boiler B#8	0.36	0.36	0.36	0.005	0.55	0.14	0.01
Boiler #15	0.04	0.04	0.04	0.004	0.38	0.09	0.006

Visible emissions from each boiler shall not exceed 20% opacity on a six-minute block average basis, except for no more than one six-minute block average in a three-hour period.

The quantity of distillate fuel fired in B#7 and B#8 combined shall not exceed 240,900 gallons/year, the equivalent of operating one boiler at maximum firing rate for 8760 hours/year.

4. Periodic Monitoring

Periodic monitoring for Boilers B#7, B#8, and #15 shall include recordkeeping to document fuel use both on a monthly and 12-month rolling total basis. Documentation shall include the type of fuel used, the quantity of fuel used, and the sulfur content of the fuel.

5. NESHAP: 40 CFR Part 63, Subpart JJJJJ

Boilers B#7, B#8, and #15 are subject to 40 CFR Part 63, Subpart JJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial,*

Commercial, and Institutional Boilers Area Sources. Boilers B#7 and B#8 are considered new boilers rated less than 10 MMBtu/hour. Boiler #15 is considered an existing oil boiler rated less than 10 MMBtu/hour.

A summary of the applicable requirements of Subpart JJJJJJ is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA; however, Cutler is still subject to the requirements. Notification forms and additional rule information can be found on the following website:
<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

An Initial Notification submittal to the U.S. Environmental Protection Agency (EPA) was due no later than January 20, 2014, or, for new sources, within 120 days after the source becomes subject to the standard. [40 CFR §63.11225(a)(2)] However, new sources that have applicable work practice standards or management practices are not required to complete an initial performance tune-up. [40 CFR Part 63.11210(f)] Per EPA, if the regular tune-up is their only requirement, new boilers also do not have to submit a Notice of Compliance Status (NOCS). Thus, Cutler is not required to submit a NOCS for Boilers B#7 and B#8.

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented in accordance with Subpart JJJJJJ. New sources, such as Boilers B#7 and B#8, which have applicable work practice standards or management practices are not required to complete an initial performance tune-up. [40 CFR §63.11210(f)]

(1) Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operation of the boiler. For B#7, B#8, and Boiler #15, a tune-up is required every five years, because each of these units has a heat input capacity of less than 5 MMBtu/hour. [40 CFR §63.11223(a) and Table 2]

(2) For each tune-up, a tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. Each report shall contain the concentration of CO in the effluent stream (ppmv) and of oxygen (volume percent), measured at high fire or typical operating load, both **before** and **after** the

boiler tune-up; a description of any corrective actions taken as part of the tune-up of the boiler; and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR §63.11223(b)(6)]

The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR §63.11225(b)]

(b) The boiler tune-up program 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, not to exceed 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hour. [40 CFR §63.11223(b)(1)]
- (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR §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, not to exceed 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hour. [40 CFR §63.11223(b)(3)]
- (4) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR §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 CFR §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 CFR §63.11223(b)(7)]

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ 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; documentation of fuel type used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review. [40 CFR §63.11225(c)]

D. Non-Emergency Generators: VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5

Units VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5 (D#2, D#3, D#4, and D#5) are identical 3000 kW units, each with a maximum heat input capacity of 32.0 MMBtu/hour firing distillate fuel (at 160 gallons/hour each) with a maximum sulfur content of 0.0015% by weight. Unit D#2 was overhauled in June of 2010, and Unit D#4 was overhauled in July of 2011. Units D#3 and D#5 are scheduled for overhaul between November 2013 and November 2014. Each of the generators is maintained with ignition timing retard for NO_x emissions control and is thus considered to be meeting the requirements of NO_x RACT as specified in 06-096 CMR 138.

1. New Source Performance Standards (NSPS)

The federal regulation 40 CFR Part 60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applies to any stationary compression ignition (CI) internal combustion engine (ICE) which is modified or reconstructed after July 11, 2005.

Modification: Under this Subpart, *modification* means any physical change to or change in the method of operation of an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by the facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere which was not previously emitted. [40 CFR Part 60, Subpart A, §60.2] The overhaul of each of these units does not increase the amount of any pollutant nor does it cause any additional pollutants to be emitted. Thus, the overhaul of each of these units does not constitute a modification.

Reconstruction: Under this Subpart, *reconstruction* means the replacement of components of an existing facility to such an extent that the following are true:

- (1) The fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new facility; and
- (2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

Fixed capital cost means the capital needed to provide all the depreciable components. [40 CFR Part 60, Subpart A, §60.15]

Based on the provided estimates, the fixed capital cost of the replacements is less than 50% of the cost of constructing a comparable, entirely new facility; thus, the overhaul of these units does not constitute reconstruction.

Because none of these units were modified or reconstructed after July 11, 2005, these units are not subject to 40 CFR Part 60, Subpart IIII.

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

Federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* (RICE), is applicable to Units VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5. These units are existing stationary CI RICE located at an area source of HAP emissions and are required by this Subpart to comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. [40 CFR §63.6595 (a)(1)]

NCTAMS LANT DET is in the process of entering into a consent agreement with EPA to address Subpart ZZZZ requirements applicable to these units, the facility's plans to acquire shore power and relegate these four generators as emergency units, the facility's operational needs, and the timelines and requirements associated with these issues.

NCTAMS LANT DET shall comply with the applicable requirements of 40 CFR Part 63, Subpart ZZZZ.

3. BACT Findings

The BACT emission limits for these generators firing distillate fuel are based on the following:

PM, PM ₁₀ , PM _{2.5}	– 0.08 lb/MMBtu; 06-096 CMR 115, BACT
SO ₂	– 0.0015 lb/MMBtu; based on firing 0.0015% sulfur fuel
NO _x	– 3.2 lb/MMBtu; A-210-70-B-A (3/18/2004), BACT/BPT
CO	– A-210-70-B-A (3/18/2004) and A-210-70-D-R (6/19/2012), BACT/BPT
VOC	– A-210-70-B-A (3/18/2004) and A-210-70-D-R (6/19/2012), BACT/BPT
Visible Emissions	– 06-096 CMR 101

The BACT emission limits for these units are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
VLF-103-D#2	2.56	2.56	2.56	0.05	102.4	27.2	3.2
VLF-103-D#3	2.56	2.56	2.56	0.05	102.4	27.2	3.2
VLF-103-D#4	2.56	2.56	2.56	0.05	102.4	27.2	3.2
VLF-103-D#5	2.56	2.56	2.56	0.05	102.4	27.2	3.2

Visible emissions from each of the distillate fuel-fired generators shall not exceed 20% opacity on a six-minute block average, except for no more than two six-minute block averages in a three hour period. [A-210-70-A-I (January 14, 2002), BPT]

- Modeling of facility emissions, as summarized later in these findings, demonstrated compliance with ambient air quality standards (AAQS) when only one of these units is operated concurrently with either Boiler B#7 or Boiler B#8. At any one time, Cutler shall operate one of the Units VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, or VLF-103-D#5 but not two or more concurrently, except during periods when one of the units is being brought off-line and another is being brought on-line. However, Cutler may operate more than one of these units concurrently for short periods of time for emergency purposes (i.e., de-icing), but such concurrent operation shall not exceed 100 hours per year. Cutler shall document the total number of hours that two or more of these units are operating concurrently for such emergency purposes and make these records available upon request. [A-210-70-D-R (June 19, 2012) and 06-096 CMR 115, BPT]

E. Emergency Engines

1. Descriptions

a. VLF-135-01 (0.5 MMBtu/hour; natural gas)

This 0.5 MMBtu/hour (50 kW) emergency engine fires natural gas at a maximum rate of 295 cubic feet per hour (cfh). It was manufactured in November of 2003 and installed in July of 2004. It exhausts through stack STVLF-135-01, which is 4.5 feet above ground level (AGL) with an inside diameter of 0.25 feet, an exit temperature of 1100 °F, and an exhaust flow rate of 0.26 cubic meters per second (m³/s) at the rated kW output.

b. VLF-503-01 (0.8 MMBtu/hour; natural gas)

This 0.8 MMBtu/hour (80 kW) emergency engine fires natural gas at a maximum firing rate of 1185 cfh. It was manufactured in November of 2003 and installed in July of 2004. It exhausts through stack STVLF-503-01, which is 5 feet AGL with an inside diameter of 0.25 feet, an exit temperature of 1200 °F, and an exhaust flow rate of 0.32 m³/s at the rated kW output.

c. VLF-123-01 (0.8 MMBtu/hour; distillate fuel)

This 0.8 MMBtu/hour (80 kW) fire pump fires 0.0015% sulfur distillate fuel at a maximum firing rate of 3.6 gallons/hour. It was manufactured in February of 2009 and installed in July of 2009. It exhausts through stack STVLF-123-01, which is 25 feet AGL with an inside diameter of 0.25 feet, an exit temperature of 1135 °F, and an exhaust flow rate of 0.26 m³/s at the rated kW output.

2. New Source Performance Standards (NSPS)

Emergency engines at the Cutler facility manufactured after 2006 are subject to New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)*, for distillate fuel-fired engines; and Subpart JJJJ, *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE)*, for natural gas or propane-fired engines. Thus, VLF-123-01 is subject to 40 CFR Part 60, Subpart IIII requirements, and the other two engines addressed in this license, both manufactured before the applicability date, are not subject to either of these subparts. [40 CFR Part 60, §60.4200(a)(2)]

40 CFR Part 60, Subpart III Requirements: Unit #VLF-123-01

- a. The unit shall be certified by the manufacturer as meeting the emission standards for new non-road compression ignition engines found in 40 CFR §60.4202. [40 CFR §60.4205(b)]
 - b. The distillate fuel fired in the unit shall not exceed 15 ppm sulfur (0.0015% sulfur by weight). [40 CFR §60.4207(b)]
 - c. The unit shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by Cutler that are approved by the engine manufacturer. Cutler may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]
3. National Emission Standards for Hazardous Air Pollutants (NESHAP)

- a. Unit #VLF-123-01

By meeting the requirements of 40 CFR Part 60, Subpart III, Unit #VLF-123-01 also meets the applicable requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ. [40 CFR Part 63, §63.6590 (c)(1)]

- b. Units #VLF-135-01, #VLF-130-01, and #VLF-503-01

Generators, defined as reciprocating internal combustion engines (RICE), are subject to both state and federal standards and limits. Federal regulation 40 CFR Part 63, Subpart ZZZZ, to which industrial generators are subject, does not have an applicability threshold based on generator size; thus, industrial generators of all sizes are subject to Subpart ZZZZ requirements. The only RICE that are exempt from Subpart ZZZZ requirements are existing emergency engines located at residential, institutional, or commercial area sources, as defined in Subpart ZZZZ.

Units at the Cutler facility which are not subject to NSPS regulations are considered existing, emergency, stationary reciprocating internal combustion engines at an area HAP source. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt these units from the federal requirements.

c. Emergency Definition

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, and stationary RICE used to pump water in the case of fire, flood, etc. There is no time limit on the use of emergency stationary RICE in emergency situations.
- (2) Paragraph (1) above notwithstanding, the emergency stationary RICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:
 - (i) 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. Cutler 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 Cutler facility maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
 - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, *Capacity and Energy Emergencies*, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
 - (iii) Periods where there is a 5% or greater deviation of voltage or frequency below standard voltage or frequency.
- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing,

emergency demand response, and periods of voltage or frequency deviation, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for the facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except as follows: The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

- (i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
- (ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (iii) The dispatch follows reliability, emergency operation, or similar protocols that follow specific NERC, regional, state, public utility commission, or local standards or guidelines,
- (iv) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (v) Cutler identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission, or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

Units #VLF-135-01, #VLF-130-01, and #VLF-503-01 shall be limited to the usage outlined in 40 CFR §63.6640(f) and therefore classified as existing emergency stationary RICE as defined in 40 CFR Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in 40 CFR §63.6640(f) may cause these engines to not be considered emergency engines and therefore subject to requirements applicable to non-emergency engines.

d. 40 CFR Part 63, Subpart ZZZZ Requirements

(1) Operation and Maintenance Requirements

	Operating Limitations (40 CFR §63.6603(a) and Table 2(d))
Spark ignition (natural gas, propane) units: #VLF-135-01, #VLF-130-01, and #VLF-503-01	<ul style="list-style-type: none"> - Change oil and filter every 500 hours of operation or annually, whichever comes first; - Inspect spark plugs every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and - Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions, or Cutler shall develop a maintenance plan which provides to the extent practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

(2) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]

(3) Startup Idle and Startup Time Minimization Requirements

During periods of startup, the facility must minimize each engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 CFR §63.6625(h) and 40 CFR Part 63, Subpart ZZZZ, Table 2d]

(4) 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 the 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 §63.6640(f)(4)(ii) are met). [40 CFR §63.6640(f)]

(5) Recordkeeping

Cutler shall keep records that document maintenance conducted on each engine and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number hours of emergency operation, including what classified the situation as emergency, and the number of hours of non-emergency operation. If an engine is operated during a period of demand response or deviation from standard voltage or frequency or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 CFR §63.6640(f)(4)(ii), Cutler shall keep records of the notification of the emergency situation and the date, start time, and end time of engine operation for these purposes. [40 CFR §63.6655(e) and (f)]

4. BACT/BPT Findings

Emission Factors

The BACT/BPT emission limits for the two natural gas fired units, VLF-135-01 (0.5 MMBtu/hour) and VLF-503-01 (0.8 MMBtu/hour); and the distillate fuel-fired unit, VLF-123-01 (0.8 MMBtu/hour), are based on the following:

Pollutant	Units Firing Natural Gas		Units Firing Distillate Fuel	
	Emission Factor, lb/MMBtu	Source of Factor	Emission Factor, lb/MMBtu	Source of Factor
PM, PM ₁₀ , PM _{2.5}	0.01	AP-42, Table 3.3-2 (7/2000)	0.31	AP-42 Table 3.3-1 (10/96)
SO ₂	0.000588		0.0015	based on firing 0.0015% sulfur fuel
NO _x	4.08		4.41	AP-42, Table 3.3-1 (10/96)
CO	0.317		0.95	
VOC	0.118		0.36	
Visible Emissions	N/A	06-096 CMR 101	N/A	06-096 CMR 101

Emissions from these emergency units shall not exceed the following:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	PM_{2.5} (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
VLF-135-01	0.005	0.005	0.005	0.0003	2.04	0.16	0.06
VLF-503-01	0.008	0.008	0.008	0.0005	3.3	0.25	0.09
VLF-123-01	0.25	0.25	0.25	0.0012	3.53	0.76	0.29

Visible emissions from each natural gas-fired emergency engine shall not exceed 10% opacity on a six-minute block average basis, except for no more than one six-minute block average in a three hour period.

Visible emissions from the distillate fuel-fired engine VLF-123-01 shall not exceed 20% opacity on a six-minute block average, except for no more than two six-minute block averages in a three-hour period.

F. Incorporation Into the Part 70 Air Emission License

The requirements in this 06-096 CMR 115 New Source Review license shall apply to the facility upon license issuance. Per *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended), Section 1(C)(8), for a modification that has undergone NSR requirements or been processed through 06-096 CMR 115, the source must apply, within one year of commencing the proposed operations, for an amendment to the Part 70 license to include the NSR license requirements, as provided in 40 CFR §70.5. Because the changes to the facility have already been made, this requirement shall be considered to mean that an application to incorporate the requirements of this NSR license shall be submitted no later than 12 months from the date of issuance of this NSR license.

G. Annual Emissions

1. Total Annual Emissions

Cutler shall be restricted to the following annual emissions for the units affected by this NSR license, based on a 12-month rolling total. The tons per year limits were calculated based on 100 hours/year for the emergency engines and 2,504,221 gallons per year diesel fuel at 0.0015% sulfur by weight in HF-401-D#5, VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, VLF-103-D#5, and VLF-103-D#6 (combined), in accordance with air emission license A-210-70-D-R (June 19, 2012).

Total Licensed Annual Emissions for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers B#7 and B#8	1.6	1.6	0.1	2.4	0.6	0.1
Boiler #15	0.2	0.2	0.02	1.7	0.4	0.03
Diesel Engines	34.6	34.6	8.8	552.9	146.9	17.3

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Emergency Engines VLF-135-01 VLF-503-01 VLF 123-01	0.1	0.1	negligible	0.4	0.1	0.1
Total TPY	36.5	36.5	8.9	557.4	148.0	17.5

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21 *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

Based on the facility's fuel use limits; the worst case emission factors from AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98; and the global warming potentials contained in 40 CFR Part 98; CO₂e emissions from the Cutler facility are below 100,000 tons of CO₂e per year. No additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

- A. A refined modeling analysis was performed to show that emissions from Cutler will not cause or contribute to violations of National Ambient Air Quality Standards (NAAQS) for SO₂, PM₁₀, PM_{2.5}, NO₂, or CO.

Since the current licensing action for Cutler includes the licensing of very minimal increased emissions, it has been determined by the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) that an assessment of increment and Class I Air Quality Related Values (AQRVs) are not required.

B. Model Inputs

The AERMOD-PRIME refined model was used to address standards in all areas. The modeling analysis accounted for the potential of building wake and cavity

effects on emissions from all modeled stacks that are below their calculated formula GEP stack heights.

All modeling was performed in accordance with all applicable requirements of the MEDEP-BAQ and the EPA.

A valid 5-year hourly off-site meteorological database was used in the AERMOD refined modeling analysis. Wind data was collected at heights of 10 and 76 meters at the Domtar (Woodland) meteorological monitoring site during the five-year period July 1, 1991, to June 30, 1996. The following parameters and their associated heights were as follows:

TABLE III-1 : Meteorological Parameters and Collection Heights

Parameter	Sensor Height(s)
Wind Speed	10 meters, 76 meters
Wind Direction	10 meters, 76 meters
Standard Deviation of Wind Direction (Sigma A)	10 meters, 76 meters
Temperature	10 meters, 76 meters

Each year of meteorological data met the 90% data recovery requirement, both singularly and jointly. Missing data from the primary site were substituted with representative data, interpolated, or coded as missing, per US EPA guidance.

In addition, hourly Gray National Weather Service data, from the same time period, were used to supplement the primary surface dataset for the required variables (cloud cover and ceiling height) that were not explicitly collected at the Domtar meteorological monitoring site. Concurrent upper-air data from the Gray National Weather Service site were also used in the analysis. Missing cloud cover and/or upper-air data values were interpolated or coded as missing, per US EPA guidance.

All necessary representative micrometeorological surface variables for inclusion into AERMET (surface roughness, Bowen ratio and albedo) were calculated using AERSURFACE from procedures recommended by US EPA.

Point-source parameters, used in the modeling for Cutler are listed in Table III-2.

TABLE III-2 : Point Source Stack Parameters

Facility/Stack	Stack Base Elevation (m)	Stack Height (m)	GEP Stack Height (m)	Stack Diameter (m)	UTM Easting NAD83 (m)	UTM Northing NAD83 (m)
CURRENT/PROPOSED						
Cutler						
Diesel – VLF103D2	8.84	17.07	35.53	0.76	635,308	4,944,613
Diesel – VLF103D3	8.84	17.07	34.30	0.76	653,312	4,944,608
Diesel – VLF103D4	8.84	17.07	35.34	0.76	635,316	4,944,602
Diesel – VLF103D5	8.84	17.07	35.99	0.76	635,320	4,944,597
Boiler – VLF103B7 (or B8)	8.84	16.15	35.99	0.46	635,335	4,944,590

Emission parameters for NAAQS modeling are listed in Table III-3.

For the purposes of determining NO₂ impacts, the Plume Volume Molar Ratio Method (PVMRM) was applied. The PVMRM is the third-tier screening approach which limits the conversion of NO to NO₂, based on the amount of monitored ozone available. Representative ozone data, concurrent with the July 1, 1991 to June 30, 1996 meteorological database, were used to develop average monthly values for use in AERMOD-PRIME.

TABLE III-3 : Stack Emission Parameters

Facility/Stack	Averaging Periods	SO ₂ (g/s)	PM ₁₀ (g/s)	PM _{2.5} (g/s)	NO ₂ (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
MAXIMUM LICENSE ALLOWED								
Cutler								
• Diesel – VLF103D2	All	0.21	0.81	0.81	12.91	3.43	628.00	23.29
• Diesel – VLF103D3	All	0.21	0.81	0.81	12.91	3.43	628.00	23.29
• Diesel – VLF103D4	All	0.21	0.81	0.81	12.91	3.43	628.00	23.29
• Diesel – VLF103D5	All	0.21	0.81	0.81	12.91	3.43	628.00	23.29
• Diesel – VLF103B7 (or B8)	All	0.02	0.01	0.01	0.07	0.02	450.00	0.001*

* Stack velocity set to 0.001 m/s, per US EPA guidance for stacks equipped with rain caps

C. Single Source Modeling Impacts

AERMOD-PRIME refined modeling was performed for a total of four operating scenarios that represented a range of normal operations. Modeling results for Cutler alone are shown in Table III-4.

Maximum predicted impacts that exceed their respective significance level are indicated in boldface type. No further modeling was required for pollutant/terrain combinations that did not exceed their respective significance levels.

TABLE III-4 : Maximum AERMOD-PRIME Impacts from Cutler Alone

Pollutant	Averaging Period	Max Impact ($\mu\text{g}/\text{m}^3$)	Class II Significance Level ($\mu\text{g}/\text{m}^3$)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Load Case
SO ₂	1-hour	14.48	10^a	635,055	4,944,614	0.00	VLF103D3/ VLF103B7 (or B8)
	3-hour	10.87	25	635,055	4,944,614	0.00	VLF103D3/ VLF103B7 (or B8)
	24-hour	2.97	5	635,055	4,944,614	0.00	VLF103D5/ VLF103B7 (or B8)
	Annual	0.20	1	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)
PM ₁₀	24-hour	9.55	5	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)
	Annual	0.28	1	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)
PM _{2.5}	24-hour	6.38	none^b	635,056	4,944,326	0.00	VLF103D2/ VLF103B7 (or B8)
	Annual	0.28	none^b	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)
NO ₂	1-hour	116.53	10^a	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)
	Annual	3.74	1	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)
CO	1-hour	190.42	2000	639,823	4,954,601	0.00	VLF103D2/ VLF103B7 (or B8)
	8-hour	68.54	500	635,069	4,944,662	0.00	VLF103D3/ VLF103B7 (or B8)

^a Interim Significant Impact Level (SIL) adopted by NESCAUM state

^b Previous Significant Impact Levels (SIL) remanded by US EPA in 2013

Note: The load case scenarios included in the above table show the maximum impact from concurrent operation of one of the four non-emergency generators (VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, or VLF-103-D#5) with one of the two package boilers (VLF-103-B#7 or VLF-103-B#8).

D. Combined Source Modeling Impacts

For predicted modeled impacts from Cutler alone that exceeded significance levels, as indicated in boldface type in Table III-4, other sources not explicitly included in the modeling analysis must be accounted for by using representative rural background concentrations for the area.

Background concentrations, listed in Table III-5, are derived from representative rural background data for use in the Eastern Maine region.

TABLE III-5 : Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu\text{g}/\text{m}^3$)	Date
SO ₂	1-hour	10	2009-2011 ¹
PM ₁₀	24-hour	42	1994 ²
PM _{2.5}	24-hour	17	2008-2010 ³
	Annual	5	
NO ₂	1-hour	43	2009-2012 ⁴
	Annual	4	2010-2012 ⁴

¹ MacFarland Hill - Acadia National Park

² Background Site - Baileyville

³ Greenville Site - Greenville

⁴ MicMac Site - Presque Isle

MEDEP examined other area sources whose impacts would be significant in or near Cutler's significant impact area. Due to the applicant's location, extent of the significant impact area, and other nearby source emissions, MEDEP has determined that no additional sources would be considered for combined source modeling.

For pollutant averaging periods that exceeded significance levels, the maximum modeled impacts were added with conservative rural background concentrations to demonstrate compliance with NAAQS, as shown in Table III-6. Because impacts for all pollutants using this method meet all NAAQS, no further modeling analyses need to be performed.

TABLE III-6 : Maximum Predicted Impacts with Background

Pollutant	Averaging Period	Max Impact ($\mu\text{g}/\text{m}^3$)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Back-Ground ($\mu\text{g}/\text{m}^3$)	Max Total Impact ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hour	14.48	635,055	4,944,614	0.00	10	24.48	196
PM ₁₀	24-hour	9.55	635,069	4,944,662	0.00	42	51.55	150
PM _{2.5}	24-hour	6.38	635,056	4,944,326	0.00	17	23.38	35
	Annual	0.28	635,069	4,944,662	0.00	5	5.28	12
NO ₂	1-hour	116.53	635,069	4,944,662	0.00	43	159.53	188
	Annual	3.74	635,069	4,944,662	0.00	4	7.74	100

E. Summary

In summary, it has been demonstrated that Cutler, when operating in accordance with the modeled scenarios, will not cause or contribute to a violation of any NAAQS for SO₂, PM₁₀, PM_{2.5}, NO₂, or CO.

ORDER

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

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

The Department hereby grants Air Emission License A-210-77-1-A pursuant to the preconstruction licensing requirements of 06-096 CMR 115 and subject to the standard and specific conditions below.

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.

SPECIFIC CONDITIONS

(1) **Boilers VLF-103-B#7 and VLF-103-B#8; and Boiler VLF-100-B#15**

- A. Fuel fired in Boilers B#7, B#8, and B#15 shall be ultra-low sulfur distillate fuel with a sulfur content not to exceed 0.0015% by weight.
- B. At any one time, Cutler shall operate either Boiler VLF-103-B#7 or Boiler VLF-103-B#8 but not both, except during periods when one of the two is being taken off-line and the other is being brought on-line. The previous sentence notwithstanding, both boilers B#7 and B#8 are licensed to operate concurrently if none of the non-emergency generators VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5 are in operation.

Operational records shall be maintained documenting compliance with this requirement. [06-096 CMR 140, BACT/BPT]

- C. Emissions from these three boilers shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boilers B#7 and B#8	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler B#7 3.0 MMBtu/hr	0.36	0.36	0.005	0.55	0.14	0.01
Boiler B#8 3.0 MMBtu/hr	0.36	0.36	0.005	0.55	0.14	0.01
Boiler #15 2.6 MMBtu/hr	0.04	0.04	0.04	0.004	0.38	0.09

- D. Visible emissions from each boiler shall not exceed 20% opacity on a six-minute block average basis, except for no more than one six-minute block average in a three-hour period. [06-096 CMR 101 (2)(B)(1)(b)]
- E. The quantity of distillate fuel fired in B#7 and B#8 combined shall not exceed 240,900 gallons/year, the equivalent of operating one boiler at maximum firing rate for 8760 hours/year.
- F. Periodic monitoring for Boilers B#7, B#8, and #15 shall include recordkeeping to document fuel use both on a monthly and 12-month rolling

total basis. Documentation shall include the type of fuel used, the quantity of fuel used, and the sulfur content of the fuel.

G. NESHP: 40 CFR Part 63, Subpart JJJJJ Requirements

1. Boiler Tune-Up Program

A boiler tune-up program shall be implemented in accordance with this Subpart, including the following requirements: [40 CFR §63.11210(f)]

- a. For B#7, B#8, and B#15, a tune-up is required every five years. [40 CFR §63.11223(a) and Table 2]
- b. For each tune-up, a tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. Each report shall contain the concentration of CO in the effluent stream (ppmv) and of oxygen (volume percent), measured at high fire or typical operating load, both **before** and **after** the boiler tune-up; a description of any corrective actions taken as part of the tune-up of the boiler; and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR §63.11223(b)(6)]

The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR §63.11225(b)]

2. Boiler Tune-Up Requirements

Boiler tune-ups, conducted to demonstrate continuous compliance, shall be performed as specified below:

- a. 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, not to exceed 72 months from the previous inspection. [40 CFR §63.11223(b)(1)]
- b. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR §63.11223(b)(2)]
- c. 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, not to exceed 72 months from the previous inspection. [40 CFR §63.11223(b)(3)]

- d. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR §63.11223(b)(4)]
- e. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, both **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 CFR §63.11223(b)(5)]
- f. 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 CFR §63.11223(b)(7)]

3. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ including the following:

- a. Copies of notifications and reports with supporting compliance documentation;
- b. Identification of each boiler, the date of tune-up, tune-up procedures followed, and the manufacturer's specifications to which the boiler was tuned;
- c. Documentation of fuel type(s) used monthly by each boiler;
- d. The occurrence and duration of each malfunction of the boiler;
- e. Actions taken during periods of malfunction to minimize emissions and 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 CFR §63.11225(c)]

(3) **Non-Emergency Engines VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5**

- A. Fuel fired in the non-emergency engines VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5 shall be ultra-low sulfur distillate fuel with a sulfur content not to exceed 0.0015% by weight. Compliance shall be demonstrated by supplier fuel records of quantities and sulfur content of each delivery.

- B. Emissions from each unit VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
PM	0.08	06-096 CMR 115, BACT	Federally Enforceable

Pollutant	lb/hour	Origin and Authority
PM	2.56	06-096 CMR 115, BACT
PM ₁₀	2.56	
PM _{2.5}	2.56	
SO ₂	0.05	
NO _x	102.4	A-210-70-B-A (3/18/2004), BACT/BPT
CO	27.2	A-210-70-B-A (3/18/2004) and
VOC	3.2	A-210-70-D-R (6/19/2012), BACT/BPT

- C. Visible emissions from each of the stacks serving VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, and VLF-103-D#5 shall not exceed 20% opacity on a six-minute block average basis, except for two six-minute block averages in a three-hour period. [A-210-70-D-I (6/19/2012), BPT]
- D. At any one time, Cutler shall operate only one of the Units VLF-103-D#2, VLF-103-D#3, VLF-103-D#4, or VLF-103-D#5 but not two or more concurrently, except during periods when one of the units is being brought off-line and another is being brought on-line. Operational records shall be maintained documenting compliance with this requirement.

The above limitation notwithstanding, Cutler may operate more than one of these units concurrently for short periods of time for emergency purposes (i.e., de-icing), but such concurrent operation shall not exceed 100 hours per year. Cutler shall document the reason for concurrent operation and the total number of hours that two or more units are operating concurrently in this emergency mode and make these records available upon request. [06-096 CMR 115, BPT]

(4) **Emergency Engines VLF-135-01, VLF-503-01, and VLF-123-01**

- A. The distillate fuel sulfur content for VLF-123-01 shall not exceed 0.0015% by weight. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]
- B. Emissions shall not exceed the following [06-096 CMR 115, BACT/BPT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
VLF-135-01 0.5 MMBtu/hour, natural gas	0.005	0.005	0.005	0.0003	2.04	0.16	0.06
VLF-503-01 0.8 MMBtu/hour, natural gas	0.008	0.008	0.008	0.0005	3.3	0.25	0.09
VLF-123-01 0.8 MMBtu/hour, distillate fuel	0.25	0.25	0.25	0.0012	3.53	0.76	0.29

C. Visible Emissions [06-096 CMR 101]

1. Visible emissions from each of the natural gas-fired emergency engines shall not exceed 10% opacity on a six-minute block average basis, except for no more than one six-minute block average in a three hour period.
2. Visible emissions from the distillate fuel-fired engine VLF-123-01 shall not exceed 20% opacity on a six-minute block average, except for no more than two six-minute block averages in a three-hour period.

D. Fire Pump VLF-123-01: NSPS Requirements

The Fire Pump unit VLF-123-01 shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:

1. The engine shall be certified by the manufacturer as meeting the emission standards for new non-road compression ignition engines found in 40 CFR §60.4202. [40 CFR §60.4205(b)]
2. The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur by weight). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 CFR §60.4207(b) and 06-096 CMR 115]
3. A non-resettable hour meter shall be installed and operated on the engine. [40 CFR §60.4209(a)]
4. The engine shall be limited to 100 hours/year for maintenance and testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another entity). These limits are based on a 12-month rolling total. Compliance shall be demonstrated by a written log of all fire pump operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115]

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

E. Emergency Engines VLF-135-01 and VLF-503-01: NESHAP Requirements

The Emergency Engines VLF-135-01 and VLF-503-01 shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:

1. Cutler shall meet the following operational limitations for each of the spark ignition (natural gas or propane fired) emergency engines:
 - a. Change the oil and filter annually,
 - b. Inspect the spark plugs annually, and
 - c. Inspect the hoses and belts annually and replace as necessary.A log shall be maintained documenting compliance with the operational limitations. [40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115]
2. A non-resettable hour meter shall be installed and operated on each engine. [40 CFR §63.6625(f)]
3. The engines shall be operated and maintained according to the manufacturer's emission-related written instructions, or Cutler shall develop a maintenance plan which provides to the extent practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]
4. During periods of startup, the facility must minimize each engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 CFR §63.6625(h) and 40 CFR Part 63, Subpart ZZZZ, Table 2d]
5. 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 §63.6640(f)(4)(ii) are met). [40 CFR §63.6640(f)]

Cutler shall keep records that include maintenance conducted on each engine and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number hours of emergency operation, including what classified the situation as emergency, and the number of hours of non-emergency operation. For an engine operated during a period of demand response or deviation from standard voltage or frequency or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 CFR §63.6640(f)(4)(ii), Cutler shall keep records of the notification of the emergency situation and the date, start time, and end time of engine operation for these purposes. [40 CFR §63.6655(e) and (f)]

(5) **Parts Washer**

The Bldg 103 main deck Parts Washer identified in Air Emission License A-210-70-D-R (June 19, 2012) has a capacity of two gallons. This unit shall comply with the applicable requirements of 06-096 CMR 130 as identified in the facility's Part 70 license.

(6) **Incorporation into the Part 70 Air Emission License**

Cutler shall submit an application to incorporate this NSR license into the Part 70 Air Emission License no later than 12 months from commencement of the requested operation, in this case to be considered no later than 12 months from the date of issuance of this NSR license. [06-096 CMR 140, Section 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 29 DAY OF December, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 7, 2011

Date of application acceptance: March 22, 2011

Date filed with the Board of Environmental Protection:

This Order prepared by Jane E. Gilbert, Bureau of Air Quality.

