



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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Maritimes & Northeast Pipeline, L.L.C.
Penobscot County
Brewer, Maine
A-854-71-H-R (SM)

Departmental
Findings of Fact and Order
Air Emission License
Renewal

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.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Maritimes & Northeast Pipeline, L.L.C. (M&N) has applied to renew their Air Emission License permitting the operation of emission sources associated with their natural gas compressor station.

The equipment addressed in this license is located at Lambert Road in Brewer, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (scf/hr)</u>	<u>Fuel Type</u>	<u>Combustion or Post Combustion Control Equipment</u>	<u>Stack #</u>
Turbine #1	174.9	171,492	Natural Gas	SoLoNOx II	1
Generator #1*	9.26	9,076	Natural Gas	none	2
Boiler #1	3.9	3,850	Natural Gas	none	3

*Generator #1 was previously listed with a nominal rating of 4.55 MMBtu/hr and 395 kW. The actual emergency generator installed has a nominal rating of 9.26 MMBtu/hr and 830 kW.

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1235 CENTRAL DRIVE, SKYWAY PARK
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(207) 764-0477 FAX: (207) 760-3143

C. Application Classification

The application for M&N does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). With the facility wide annual emission limits listed in the Conditions of this license, the facility is licensed below the major source thresholds for criteria pollutants and hazardous air pollutants (HAP) and is considered a synthetic minor and an area source of HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 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 existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

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

B. Turbine #1

Turbine #1 is a Solar Titan Model 130-20502S3 (Titan 130) combustion turbine. It provides direct drive power to run a compressor that is used to recompress and move natural gas through the transmission pipeline. Turbine #1 has an approximate maximum heat input of 174.9 MMBtu/hr firing natural gas. Initial startup of the turbine occurred in October 2008. The last compliance test for NO_x was performed in September 2013.

Turbine #1 is subject to New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart KKKK, Standards of Performance for Stationary Gas Turbines for which construction commenced after February 18, 2005. Turbines subject to Subpart KKKK are exempt from NSPS Subpart GG, Standards of Performance for Stationary Gas Turbines for which construction commenced after October 3, 1977.

The following control strategies represent BPT for Turbine #1:

PM/PM ₁₀	Good Combustion Practices
SO ₂	Firing of Pipeline Quality Natural Gas
NO _x	SoLoNO _x II Combustion Technology
CO	SoLoNO _x II Combustion Technology
VOC	SoLoNO _x II Combustion Technology
HAP	Good Combustion Practices

1. Emission Limit Basis

a. Particulate Matter (PM, PM₁₀)

BPT for PM emissions from Turbine #1 consists of firing pipeline quality natural gas exclusively and good combustion practices. Units firing fuels with low ash content and high combustion efficiency exhibit low particulate matter emissions. The most stringent particulate control method demonstrated for gas turbines is the use of low ash fuel such as natural gas. Thus firing of only pipeline quality natural gas is BPT.

b. Sulfur Dioxide

Sulfur Dioxide (SO₂) is formed from the oxidation of sulfur in fuel. The most stringent method of control for SO₂ that has been demonstrated for gas fired turbines is firing pipeline quality natural gas.

c. Nitrogen Oxides

Nitrogen Oxides (NO_x) emitted from the combustion turbine results from the oxidation of both fuel bound nitrogen and atmospheric nitrogen (thermal NO_x). Natural gas has very low fuel bound nitrogen. Therefore, reducing NO_x emissions must focus on reducing the thermal NO_x component. M&N uses SoLoNO_x Combustion Technology, which employs lean-premixed combustion techniques. The premixing of fuel and air upstream of the combustor primary zone helps to ensure that the flame operates at a fuel lean condition, thus lowering flame temperature and minimizing thermal NO_x formation.

The SoLoNO_x Combustion Technology includes augmented backside cooled (ABC) liners and an advanced thermal barrier coating (TBC). The ABC liners eliminate air injection into the combustor for wall cooling. The wall temperatures are controlled exclusively through convective cooling by high velocity air flow on the cold side of the liner. The TBC is a zirconia-based material that is plasma-sprayed onto the liner which reduces wall temperature. The ABC/TBC combination allows operation without air injection for cooling of the combustor liner, which eliminates quenching along the walls and thereby reduces CO emissions. The

reduction of CO levels also allows the combustor to be operated at lower flame temperatures, which reduces NO_x formation.

The Department has concluded BPT for NO_x emissions shall consist of operating the turbines with SoLoNO_x II Combustion Technology. NSPS, Subpart KKKK contains a NO_x emission limit of 25 ppmvd at 15% O₂ for temperatures greater than or equal to 0°F, and 150 ppmvd at 15% O₂ for temperatures less than 0°F and loads less than 75% of peak load. BPT for ambient temperatures above 0°F shall be a NO_x emission limit of 15 ppmvd @ 15% O₂. The BPT for cold weather operations shall be the NSPS limit of 150 ppmvd at 15% O₂.

d. Carbon Monoxide

Carbon Monoxide (CO) results from the incomplete combustion of gas in the turbine. The turbine is guaranteed to achieve 25 ppmvd CO @ 15% O₂ above 0°F.

The gas turbine uses a dry low NO_x combustor system, integrates sophisticated burner controls with staged premixed combustion zones, and uses fuel feed systems to achieve the required low NO_x emissions. Additional CO reductions are attributed to the ABC/TBC technology described above.

The Department has determined M&N's use of SoLoNO_x II combustor technology and associated good combustion practices and instrumentation and controls for CO is BPT. The lb/hr emission limits listed in the Conditions of this license are based off of the ppm values.

e. Volatile Organic Compounds

The majority of volatile organic compounds (VOCs) emitted from gas fired turbines come from unburned hydrocarbons. Control of VOCs is accomplished by providing adequate fuel residence time and high temperature in the combustion zone to ensure complete combustion. The Department has determined that BPT for VOC's is using combustion control, via the SoLoNO_x II combustor.

f. Hazardous Air Pollutants

Formaldehyde is the only organic compound which is also a hazardous air pollutant emitted in more than a negligible amount. Total emissions are less than 2 tons/year, substantially below the 10 ton/year major source threshold. Good combustion practices with a state of art combustion system insure complete combustion of organic constituents of the fuel streams. Therefore, good combustion practices constitute BPT for the control of hazardous air pollutants.

2. Fuel Monitoring

In accordance with 40 C.F.R. §60.4365(a), M&N demonstrates compliance with the total sulfur content of the fuel requirements by maintaining a current tariff sheet for the fuel specifying that the maximum total sulfur content of the gas is 20 grains of sulfur or less per 100 standard cubic feet.

3. Low Compressor Speeds

According to the turbine manufacturer and M&N, operation of SoLoNO_x II for this unit is adversely affected at gas producer speeds below 87% of capacity. During normal operating conditions above these minimum gas producer speeds, the majority of the fuel (90-100%) is lean-premixed fuel and the balance is pilot fuel. However, when the gas producer speed falls below 87%, the fuel ratio shifts to a high portion of pilot fuel, causing an increase in NO_x and CO emissions.

To address this problem, M&N uses a programming interlock in its control software to ensure that after the units are brought on line they do not operate below a gas producer speed of 87% except as part of the start-up and shut-down process. M&N estimates the likely number of start-up/shutdown events that occur is 65 events per year and have included data to account for start-up/shutdown emissions as part of the facility's PTE calculations.

4. Operation at Low Temperatures

Under normal operating conditions the majority of the fuel is lean-premixed fuel and the balance is pilot fuel. However, the turbine control systems are programmed to increase pilot fuel when the ambient temperature drops below zero to maintain combustion stability. As a result, emissions increase at these temperatures. The license includes provisions for increased emissions during periods when the ambient temperature falls below zero degrees Fahrenheit. These provisions are consistent with the NSPS Subpart KKKK limits for cold temperature operation.

5. Turbine Case Venting and Station Piping Venting

When a turbine sits idle for some time, it is decompressed and vented to atmosphere to prevent damage to equipment. The turbine is also decompressed and vented when maintenance work is done on the turbine. M&N shall keep records as specified for the turbine venting.

M&N performs emergency shutdown (ESD) testing and routine maintenance of station piping which results in venting natural gas to the atmosphere and

may also experience actual ESDs. These activities are necessary for safety reasons and no specific emission limit is imposed to restrict these activities. M&N shall notify the Department as specified of any release that results in more than 85,000 scf of natural gas.

6. Summary of Emission Limits

Except during periods of start-up and shutdown, Turbine #1 shall not exceed the following emissions at ambient temperatures greater than or equal to 0°F.

Pollutant	ppmvd @ 15% O ₂	lb/hr	lb/MMBtu	Citation
PM	--	1.15	0.01	06-096 CMR 115, BPT
PM ₁₀	--	1.15	0.01	06-096 CMR 115, BPT
SO ₂	--	0.59	--	06-096 CMR 115, BPT
NO _x	15	9.46	--	06-096 CMR 115, BPT
CO	--	9.60	--	06-096 CMR 115, BPT
VOC	--	1.20	--	06-096 CMR 115, BPT

Except during periods of start-up and shut-down, Turbine #1 shall not exceed the following emissions at ambient temperatures less than 0°F:

Pollutant	ppmvd @ 15% O ₂	lb/hr	lb/MMBtu	Citation
PM	--	1.19	0.01	06-096 CMR 115, BPT
PM ₁₀	--	1.19	0.01	06-096 CMR 115, BPT
SO ₂	--	0.61	--	06-096 CMR 115, BPT
NO _x	150	78.23	--	40 CFR 60, Subpart KKKK and 06-096 CMR 115, BPT
CO	--	59.53	--	06-096 CMR 115, BPT
VOC	--	3.73	--	06-096 CMR 115, BPT

Visible emissions from Turbine #1 shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

C. Boiler #1

M&N operates Boiler #1 for heat. The boiler is rated at 3.9 MMBtu/hr and fires natural gas. The boiler was installed in 2008 and exhausts through its own stack.

Due its size, Boiler #1 is not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

Gas-fired boilers are exempt from *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ).

BPT Findings

The BPT emission limits for Boiler #1 were based on the following:

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BPT
- SO₂ – 0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
- NO_x – 75 lb/MMscf based manufacturer's data
- CO – 38 lb/MMscf based manufacturer's data
- VOC – 5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
- Opacity – 06-096 CMR 101

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.20	0.20	0.29	0.15	0.02

Visible emissions from the boiler shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

D. Generator #1

M&N operates one emergency generator, Generator #1. Generator #1 was manufactured in October 2007 with a nominal rating of 9.26 MMBtu/hr (830 kW) and fires natural gas.

1. BPT Findings

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

- PM/PM₁₀ - 0.05 lb/MMBtu from 06-096 CMR 115, BPT
- SO₂ - 0.60 lb/MMscf, AP-42, Table 3.2-2, dated 7/00
- NO_x - 570 lb/MMscf, manufacturer's data
- CO - 371 lb/MMscf, manufacturer's data
- VOC - 41 lb/MMscf, manufacturer's data
- Opacity - 06-096 CMR 115, BPT

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.46	0.46	0.01	5.18	3.36	0.38

Visible emissions from Generator #1 shall not exceed 10% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. There is no limit on emergency operation. Generator #1 shall be equipped with a non-resettable hour-meter to record operating time. To demonstrate compliance with the operating hours limit, M&N shall keep records of the total hours of operation and the hours of emergency operation for Generator #1.

Generator #1 is only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Generator #1 is not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity.

2. 40 CFR Part 60, Subpart JJJJ

Generator #1 is an emergency generator which was manufactured prior to January 1, 2009 and is therefore not subject to *Standards of Performance for Spark Ignition Internal Combustion Engines*, 40 CFR Part 60, Subpart JJJJ.

3. 40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* applies to any existing, new, or reconstructed RICE located at a major or area source or HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. Generator #1 is considered a new stationary RICE located at an area source of HAP emissions because construction commenced on or after June 12, 2006.

Per 40 CFR Part 63.6590(c)(1), compliance for new stationary RICE is met by complying with 40 CFR Part 60, Subpart JJJJ. Since Generator #1 is not subject to 40 CFR Part 60, Subpart JJJJ, there are no applicable NESHAP requirements for this engine.

E. Parts Washer

M&N operates a parts washer which uses a VOC solvent. The parts washer is subject to *Solvent Cleaners*, 06-096 CMR 130 (as amended) and records shall be kept documenting compliance.

F. Annual Emissions

1. Total Annual Emissions

M&N shall be restricted to the following annual emissions, based on a 12 month rolling total. The tons per year limits were calculated based on the following:

- Turbine #1 emission limits were calculated based on ambient temperature data indicating 275 hours per year of operation at ambient temperatures less than or equal to 0°F; 2 hours per year of operation at ambient temperatures less than or equal to -20 °F.
- 8,760 hours per year of operation on Turbine #1 including 65 startup and shutdown events per year.
- 100 hours/year operation of Generator #1
- 8,760 hours/year operation of Boiler #1

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

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Turbine #1	5.1	5.1	2.6	44.0	59.3	5.6
Boiler #1	0.9	0.9	—	1.3	0.6	0.1
Generator #1	0.1	0.1	—	0.3	0.2	0.1
Gas Releases	—	—	—	—	—	17.2
Other Fugitive	—	—	—	—	—	6.9
Total TPY	6.1	6.1	2.6	45.6	60.1	29.9

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 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 limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, M&N is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

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

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

The total facility licensed emissions are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

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

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

The Department hereby grants Air Emission License A-854-71-H-R subject to the following conditions.

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

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §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 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]

- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
 - A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 2. pursuant to any other requirement of this license to perform stack testing.

- B. install or make provisions to install test ports that meet the criteria of 40 CFR 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 CMR 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of 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 CFR 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 CMR 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation.
[06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods,

at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) Turbine #1

A. Except during periods of start-up and shut-down, Turbine #1 shall not exceed the following emissions at ambient temperature greater than or equal to 0°F:

Pollutant	ppmvd @ 15% O₂	lb/hr	lb/MMBtu	Citation
PM	--	1.15	0.01	06-096 CMR 115, BPT
PM ₁₀	--	1.15	0.01	06-096 CMR 115, BPT
SO ₂	--	0.59	--	06-096 CMR 115, BPT
NO _x	15	9.46	--	06-096 CMR 115, BPT
CO	--	9.60	--	06-096 CMR 115, BPT
VOC	--	1.20	--	06-096 CMR 115, BPT

B. Except during periods of start-up and shutdown, Turbine #1 shall not exceed the following emissions at ambient temperatures less than 0°F:

Pollutant	ppmvd @ 15% O₂	lb/hr	lb/MMBtu	Citation
PM	--	1.19	0.01	06-096 CMR 115, BPT
PM ₁₀	--	1.19	0.01	06-096 CMR 115, BPT
SO ₂	--	0.61	--	06-096 CMR 115, BPT
NO _x	150	78.23	--	40 CFR 60, Subpart KKKK and 06-096 CMR 115, BPT
CO	--	59.53	--	06-096 CMR 115, BPT
VOC	--	3.73	--	06-096 CMR 115, BPT

C. M&N shall keep records of the number of days during the calendar year that the ambient temperature is less than zero degrees Fahrenheit. For any gaps in M&N's temperature data, it may utilize meteorological data from an appropriate representative location. [06-096 CMR 115, BPT]

D. Visible emissions from Turbine #1 shall not exceed 10% opacity on a six (6) minute block average basis, except for one (1) six (6) minute average in a three (3) hour period. [06-096 CMR 115, BPT]

- E. Turbine #1 shall only fire pipeline quality natural gas.
[06-096 CMR 115, BPT]
- F. Compliance with the PM and PM₁₀ lb/hr emission limits shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5 upon request by the Department. Test results shall be reported in the applicable units of the standard. [06-096 CMR 115, BPT]
- G. M&N shall perform annual performance tests to demonstrate compliance with the NO_x emission limits. If the NO_x emission results meet the requirements of 40 CFR 60.4340, then the frequency of the performance tests may be reduced to once every two years (no more than 26 months between tests).
[40 CFR 60 Subpart KKKK and 06-096 CMR 115, BPT]
- H. Compliance with the CO licensed emission limits shall be determined through stack testing in accordance with 40 CFR Part 60 Appendix A, Method 10, upon request by the Department. Test results shall be reported in the applicable units of the standard. [06-096 CMR 115, BPT]
- I. Compliance with the SO₂ lb/hr emission limit shall be demonstrated by the maximum natural gas firing rate into the turbine and the available sulfur content data that is maintained in accordance with NSPS Subpart KKKK and described in Condition (18) below. [40 CFR 60 Subpart KKKK and 06-096 CMR 115, BPT]
- J. M&N shall demonstrate compliance with the VOC lb/hr limit upon request by the Department by either performing a Method 25A test for Total Organic Compounds (TOC) or by performing a Method 25A test and Method 18 tests for methane and ethane and subtracting the Method 18 results from the Method 25A results. Test results shall be reported in the applicable units of the standard. [06-096 CMR 115, BPT]
- K. M&N shall keep documentation of all maintenance and repairs to Turbine #1. The documentation shall include all planned shutdowns, maintenance procedures and major parts replacements. These records shall be available to the Department upon request. [06-096 CMR 115, BPT]
- L. Except during periods of start-up and shut-down, M&N shall not operate Turbine #1 at gas producer speeds less than 87%. Compliance shall be demonstrated by record keeping of gas producer speeds at all operating times.
[06-096 CMR 115, BPT]

- (17) Turbine #1 is subject to and shall comply with the applicable requirements of the Federal NSPS 40 CFR Part 60, Subpart A (General Provisions) and Subpart KKKK (Stationary Gas Turbines).
- (18) In accordance with NSPS 40 CFR Part 60 Subpart KKKK, M&N shall maintain a current FERC Gas Tariff establishing gas quality, which documents the total sulfur content is 20 grains of sulfur or less per 100 scf of gas or otherwise comply with the specified methods for demonstrating compliance with the fuel sulfur content requirements of 40 CFR §60.4365.
- (19) M&N may install like-kind manufacturer-supplied replacement components for the turbine that occurs either as part of scheduled maintenance of a turbine or in the event of a malfunction or outage and subsequent repair. M&N shall notify the Department in writing in advance of any replacement of turbine components and shall still be subject to and responsible for any applicable NSPS provisions with respect to replacement of the turbine or any components.
[06-096 CMR 115, BPT]
- (20) M&N shall monitor and record the following as specified, for the facility
[06-096 CMR 115, BPT]:

Parameter	Monitor	Record Monitor Data	Compile Fuel Usage
Natural Gas Flow Rate (actual cubic feet input)	Continuously	Continuously	Monthly

- (21) If any parameter monitor is recording accurate and reliable data less than 98% of the source-operating time within any quarter of the calendar year, the Department may initiate enforcement action and may include in that enforcement action any period of time that the continuous emission monitoring system was not recording accurate and reliable data during that quarter unless the licensee can demonstrate to the satisfaction of the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.
[06-096 CMR 115, BPT]

- (22) M&N shall maintain a log of all turbine case venting and ESD events that includes the following information:

- A. date of the event
- B. estimated or actual event start time
- C. estimated or actual event duration
- D. event source
- E. event type (shutdown, maintenance, testing, or malfunction)
- F. description of event
- G. estimate of the amount of natural gas vented
- H. estimate of VOC density of the released gas
- I. calculation of the tons of VOC emitted based on the VOC content of the gas released.

[06-096 CMR 115, BPT]

- (23) M&N shall notify the Department in advance of any scheduled venting event that is expected to result in the release of more than 85,000 scf of natural gas. M&N shall notify the Department within two working days of any unscheduled venting event that results in the release of more than 85,000 scf of natural gas.

[06-096 CMR 115, BPT]

(24) **Record Keeping Requirements**

M&N shall maintain records of the most current six year period of all monitored fuel flow rates required as a condition of this license. These records shall consist of the following:

- A. Documentation which shows fuel flow rates during all source operating time, including calibration and audits; and
- B. A complete data set of all fuel flow rates, as specified in this license. All records shall be made available to the Department upon request.

[06-096 CMR 115, BPT]

(25) **Boiler #1**

- A. Boiler #1 shall fire only pipeline quality natural gas. [06-096 CMR 115, BPT]
- B. The sulfur content of the fuel shall not exceed 20 grains of sulfur per 100 scf of gas, as documented by a current FERC Gas Tariff sheet establishing gas quality. [06-096 CMR 115, BPT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.05	06-096 CMR 115, BPT

D. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.20	0.20	0.29	0.15	0.02

E. Visible emissions from Boiler #1 shall each not exceed 10% opacity on a six (6) minute block average basis except for one (1) six (6) minute average in a three 3-hour period. [06-096 CMR 101]

(26) **Generator #1**

- A. Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]
- B. M&N shall keep records that include maintenance conducted on Generator #1 and the hours of operation of the 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 CMR 115, BACT]
- C. If Generator #1 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, M&N shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [06-096 CMR 115, BACT]

D. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.05	06-096 CMR 115, BPT

E. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.46	0.46	0.01	5.18	3.36	0.38

F. Visible emissions from Generator #1 shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period. [06-096 CMR 115, BPT]

G. Generator #1 is only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Generator #1 shall not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity.

(27) **Parts Washer**

Parts washers at M&N are subject to *Solvent Cleaners*, 06-096 CMR 130 (as amended).

A. M&N shall keep records of the amount of solvent added to each parts washer. [06-096 CMR 115, BPT]

B. The following are exempt from the requirements of 06-096 CMR 130 [06-096 CMR 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 applicable sources under Chapter 130.

1. M&N shall attach a permanent conspicuous label to each unit summarizing the following operational standards [06-096 CMR 130]:

- (i) Waste solvent shall be collected and stored in closed containers.
- (ii) 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.
- (iii) 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.

- (iv) The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
 - (v) Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the degreaser.
 - (vi) 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.
 - (vii) Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
 - (viii) Work area fans shall not blow across the opening of the degreaser unit.
 - (ix) The solvent level shall not exceed the fill line.
2. The remote reservoir cold cleaning machine shall be equipped with a perforated drain with a diameter of not more than six inches.
[06-096 CMR 130]

(28) **Annual Emissions**

- A. Total emissions from all licensed sources at the facility shall not exceed the following on a 12-month rolling total basis. [06-096 CMR 115, BPT]

Pollutant	Tons/Year
PM	6.1
PM ₁₀	6.1
SO ₂	2.6
NO _x	45.6
CO	60.1
VOC	29.9
Total HAP	9.9

- B. M&N shall keep monthly records sufficient to document the facility's emissions on a 12-month rolling total basis and shall make those records available to the Department upon request. [06-096 CMR 115, BPT]

(29) **Annual Emission Statement**

In accordance with *Emission Statements*, 06-096 CMR 137 (as amended), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of either:

- 1) A computer program and accompanying instructions supplied by the Department; or

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- 2) A written emission statement containing the information required in 06-096 CMR 137.

The emission statement must be submitted as specified by the date in 06-096 CMR 137.

- (30) M&N shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 17 DAY OF June, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Maia Allen Robert Core for
PATRICIA W. AHO, COMMISSIONER

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

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/16/14

Date of application acceptance: 4/16/14

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Poland, Bureau of Air Quality.

