



DEPARTMENT ORDER

**Maritimes & Northeast Pipeline, L.L.C.
York County
Eliot, Maine
A-855-71-J-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

Maritimes & Northeast Pipeline, L.L.C. (M&N) was issued Air Emission License A-855-71-I-R on March 17, 2015, for the operation of emission sources associated with their natural gas compressor station.

M&N has requested an amendment to their license in order to do the following:

1. Add a second combustion turbine;
2. Replace a small auxiliary boiler;
3. Add a new gas heater;
4. Install gas cooling;
5. Update the startup and shutdown related emissions for the existing Turbine #1;
6. Update the basis for SO₂ emissions for all natural gas-fired equipment;
7. Update the expected hours of turbine operation at low temperatures;
8. Update the federal regulations applicable to Generator #1;
9. Define how annual emissions for the turbines are calculated and revise the monitoring plan accordingly; and
10. Update the methodology for calculating facility-wide emissions from gas releases and fugitive emissions.

These changes are all part of M&N's "Portland XPress Project" which will include increasing the pressure to which the natural gas in the pipeline will be compressed and enabling bi-directional compression (i.e. the ability to compress gas either north or south).

The equipment addressed in this license amendment is located on Rt 236 in Eliot, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Fuel Burning Equipment

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Installation	Stack #
Turbine #1	98.6 ^b	96,678 ^b	Natural Gas	2008	1
Turbine #2 ^a	61.1 ^b	59,869 ^b	Natural Gas	2020	2
Boiler #2 ^{a,c}	4.7	4,632	Natural Gas	2020	BLR-2
Generator #1	5.02	4,920	Natural Gas	2008	GEN-1

^a Denotes new equipment.

^b At ambient temperatures above 0 °F.

^c Boiler #2 replaces Boiler #1.

C. Insignificant Activities

M&N has proposed the installation of a fuel gas heater with a maximum heat input of 0.4 MMBtu/hr firing natural gas. This equipment is considered an insignificant activity per *Major and Minor Source Air Emission License Regulation*, 06-096 C.M.R. ch. 115, Appendix B, § B.2 and is therefore mentioned for completeness purposes only.

M&N intends to compress the gas in the pipeline to higher pressures which will cause the gas temperature to increase. Gas cooling equipment has been proposed to be installed. There are no air emissions from this equipment beyond that already accounted for in this license. Therefore, the gas cooling is determined to be an insignificant activity.

M&N may operate small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More information regarding requirements for small stationary engines is available on the Department's website at the link below.

<http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf>

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

D. Definitions

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

Definitions Specific to Turbines #1 and #2

Low Temperature Operation means operation at or below an ambient temperature of 0 °F.

Normal Operation means operation when SoLoNO_xTM is Enabled and Active at temperatures above 0 °F. During normal operation, the majority of fuel fired in the turbine is lean-premixed fuel, and the balance is pilot fuel. At these times the turbine is achieving vendor guaranteed emissions indicated by the SoLoNO_xTM system being both Enabled and Active.

Shutdown means the time from when SoLoNO_xTM becomes Inactive to the end of fuel combustion.

Startup means the time from the start of fuel combustion to the time that SoLoNO_xTM becomes Active.

Transient Event means a period of time when SoLoNO_xTM is Enabled but also Inactive.

E. Application Classification

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

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission" levels as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Significant Emission Levels
PM	2.7	4.3	+1.6	100
PM ₁₀	2.7	4.3	+1.6	100
SO ₂	1.3	3.6	+2.3	100
NO _x	22.1	32.1	+10.0	100
CO	27.7	66.1	+38.4	100
VOC	24.8	37.0	+12.2	50

This modification is determined to be a minor modification and has been processed as such.

F. Facility Classification

With the facility-wide annual emissions limits contained in the Conditions of this license the facility is licensed as follows:

- As a synthetic minor source of air emissions, because the licensed emissions are below the major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Turbine #2

M&N has proposed the installation of a second combustion turbine (Turbine #2). Turbine #2 is a Solar Centaur Model 50-6202LS simple cycle combustion turbine with a maximum heat input of 61.1 MMBtu/hr (at temperatures > 0 °F). It will provide direct drive power to run a compressor used to recompress and move natural gas through the transmission pipeline. Turbine #2 is a new unit expected to be installed in 2020.

1. 06-096 C.M.R. ch. 101

Turbine #2 is a stationary internal combustion engine manufactured after 2000. Thus, it is subject to a visible emission standard per *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101. However, the BACT limit for visible emissions is more stringent. Therefore, only the most stringent visible emission limit is contained in this license.

2. 06-096 C.M.R. ch. 103

Turbine #2 is fuel burning equipment with a rated capacity greater than 3 MMBtu/hr, and is therefore subject to *Fuel Burning Equipment Particulate Emission Standard*, 06-096 C.M.R. ch. 103. It is subject to a PM emission limit of 0.08 lb/MMBtu per § 2(B)(1)(b), because it has a maximum heat input capacity between 50 and 250 MMBtu/hr and fires natural gas. It is expected that this emission limitation will be easily met as Turbine #2 fires natural gas (an inherently low PM emitting fuel) and it will be subject to a lb/hr PM limit that is much lower than that corresponding to 0.08 lb/MMBtu.

3. 40 C.F.R. Part 60, Subpart KKKK

Turbine #2 is subject to *Standards of Performance for Stationary Combustion Turbines*, 40 C.F.R. Part 60, Subpart KKKK since it was constructed after February 18, 2005.

Turbines which are subject to 40 C.F.R. Part 60, Subpart KKKK are exempt from the requirements of *Standards of Performance for Stationary Gas Turbines*, 40 C.F.R. Part 60, Subpart GG per § 60.4305(b).

a. Standards

(1) Nitrogen Oxides NO_x

Per Table 1 of Subpart KKKK, Turbine #2 is subject to a NO_x emission limit of 25 ppm at 15% O₂ during operation at or above 75% of peak load and at temperatures at or above 0 °F. However, the BACT limit for NO_x emissions for this type of operation is more stringent. Therefore, only the most stringent limit is contained in this license.

For operating loads less than 75% of peak load or temperatures below 0 °F, Table 1 of Subpart KKKK limits NO_x emissions to 150 ppm at 15% O₂.

(2) Sulfur Dioxide (SO₂)

M&N has elected to comply with an SO₂ emission limit of 0.060 lb/MMBtu per § 60.4330(a)(2).

b. Performance Testing

- (1) M&N shall perform an initial performance test on Turbine #2 for NO_x within 60 days after achieving the maximum production rate but not later than 180 days after initial startup. [40 C.F.R. §§ 60.8(a) and 60.4400(a)]
- (2) Section § 60.4340(a) allows M&N to perform subsequent performance tests every two years (in lieu of annually) if the results of the performance test is less than or equal to 75% of the emission limit contained in Subpart KKKK. Since Turbine #2 is subject to a BACT emission limit for NO_x that is less than 75% of the Subpart KKKK emission limit, M&N will always be subject to performance testing on a two-year schedule.
- (3) Performance testing shall be done at any load condition within plus or minus 25% of 100% of peak load. M&N shall conduct three separate test runs for each performance test. The minimum run time shall be 20 minutes. The ambient temperature shall be greater than 0 °F during the performance test. [40 C.F.R. § 60.4400(b)]

c. Recordkeeping

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. [40 C.F.R. § 60.4365(a)]

4. Operation at Low Temperatures

The turbine control system is programmed to increase pilot fuel when the ambient temperature drops below 0 °F to maintain combustion stability. As a result, emissions increase at these temperatures. This license includes provisions for increased emissions during periods when the ambient temperature is below 0 °F. Annual emissions estimates conservatively assume Turbine #2 will operate up to 120 hours/year at temperatures between 0 °F and -20 °F and one hour per year of operation below -20 °F. Emissions from operation at low temperatures are to be included when demonstrating compliance with the facility's annual emission limits.

5. Startup/Shutdown and Transient Events

As discussed in the BACT section below, emissions of NO_x, CO, and VOC will be controlled using Solar's SoLoNO_xTM which is a technology based on dry, lean-premixed combustion.

SoLoNO_xTM can be either Enabled or Disabled, essentially either on or off. SoLoNO_xTM is typically Disabled during low load conditions, i.e., startup and shutdown, as well as during low temperature events (see Definitions section). The control system for Turbine #2 is equipped with an interlock which prevents operating in SoLoNO_xTM Disabled mode except for periods of Startup, Shutdown, and low temperature.

When Enabled, SoLoNO_xTM can be either Active or Inactive. A transient event occurs when SoLoNO_xTM is Enabled but Inactive. These are infrequent periods of a short duration (typically a few minutes or less) when the turbine is not achieving the emissions guarantee provided by Solar. These periods occur as a result of the turbine losing combustion stability in the lean premix mode. To stabilize combustion, the turbine control system increases the pilot fuel to the combustion chamber resulting in higher emissions until stable lean premix mode can be achieved again. The cause of transient events is usually outside the control of M&N, e.g. a bump/drop in pipeline pressure due to a large facility coming on/off-line.

M&N will continuously monitor the SoLoNO_xTM system and whether it is Enabled/Disabled and Active/Inactive. In calculating compliance with the facility's annual emission limits, M&N shall determine the amount of operating time the turbine spent in each mode and calculate emissions based on the following:

Mode	Calculate Emissions Using Emission Factors Based On...
Startup	The emissions data supplied by the turbine manufacturer at the time of the most recent permit application.
Shutdown	The emissions data supplied by the turbine manufacturer at the time of the most recent permit application.
Normal Operation	Licensed emission limits for temperatures above 0 °F
Low Temperature	Licensed emission limits for appropriate temperature range
Transient Event	Licensed emission limits for temperatures less than or equal to -20 °F

6. BACT Findings

a. Particulate Matter (PM/PM₁₀)

Units firing fuels with low ash content (such as natural gas) and high combustion efficiency exhibit low particulate matter emissions. The Department finds the firing of only pipeline quality natural gas and emission limits of 0.40 lb/hr during normal

operation and 0.41 lb/hr during operation at low temperature for PM and PM₁₀ represent BACT for emissions of PM/PM₁₀ from Turbine #2.

Visible emissions from Turbine #2 shall not exceed 10% opacity on a six-minute block average basis.

b. Sulfur Dioxide (SO₂)

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. The Department finds the firing of only pipeline quality natural gas and an emission limit of 0.34 lb/hr during normal operation and 0.35 lb/hr during operation at low temperature represent BACT for emissions of SO₂ from Turbine #2 based on a Tariff limit of 2 grains of sulfur per 100 scf of gas.

c. Nitrogen Oxides (NO_x)

NO_x is formed from the oxidation of both fuel-bound nitrogen and atmospheric nitrogen (thermal NO_x). Natural gas has very little fuel-bound nitrogen. Therefore, reducing NO_x emissions typically focuses on reducing thermal NO_x.

Dry Low-NO_x (DLN) is a combustion control technology which reduces NO_x emissions by injecting the combustion air and/or fuel at several locations or stages which spreads the flame over a larger area. This reduces flame temperature and decreases the formation of thermal NO_x.

SoLoNO_xTM is Solar's version of DLN technology. (Previously, this technology was referred to as SoLoNO_x IITM. Solar has since dropped the "II" and simply refers to their DLN combustion control as SoLoNO_xTM.)

Turbine #2 is equipped with SoLoNO_xTM. The system is designed to achieve a guaranteed NO_x emission rate of 9 ppmdv at 15% O₂ at ambient temperatures above 0 °F and steady-state operations between 50-100% load.

The Department finds the use of SoLoNO_xTM combustion controls and the following emission limits represent BACT for emissions of NO_x from Turbine #2:

Pollutant	T > 0 °F	0 °F ≥ T > -20 °F	T ≤ -20 °F
NO _x	9 ppmdv @ 15% O ₂		
	1.98 lb/hr	9.44 lb/hr	26.96 lb/hr

The lb/hr emission limits listed above for operation at low temperatures are independent of the emission limit found in 40 C.F.R. Part 60, Subpart KKKK.

d. Carbon Monoxide (CO)

CO results from incomplete combustion of natural gas within the turbine. Emissions of CO can be controlled by use of an oxidation catalyst or through good combustion practices.

The most effective control technology for the reduction of CO from a natural gas-fired turbine is the use of an oxidation catalyst. Exhaust gases are passed over a catalyst bed where excess oxygen in the exhaust oxidizes the CO to CO₂. Although technically feasible, the cost to install and operate an oxidation catalyst in this application would exceed \$10,500 per ton of CO controlled. Thus, the use of an oxidation catalyst was determined to be economically infeasible.

The Department finds the use of good combustion practices and controls, such as those inherent to the SoLoNO_xTM combustion system, and the following emission limits represent BACT for emissions of CO from Turbine #2:

Pollutant	T > 0 °F	0 °F ≥ T > -20 °F	T ≤ -20 °F
CO	3.35 lb/hr	13.68 lb/hr	20.52 lb/hr

e. Volatile Organic Compounds (VOC)

VOC results from the incomplete combustion of natural gas within the turbine. Emissions of VOC are minimized by providing adequate fuel residence time and temperature in the combustion zone.

The Department finds the use of good combustion practices and controls, such as those inherent to the SoLoNO_xTM combustion system, and the following emission limits represent BACT for emissions of VOC from Turbine #2:

Pollutant	T > 0 °F	0 °F ≥ T > -20 °F	T ≤ -20 °F
VOC	0.42 lb/hr	0.86 lb/hr	1.28 lb/hr

f. Hazardous Air Pollutants (HAP)

Internal combustion of natural gas can emit small amounts of HAP, most notably formaldehyde. Total formaldehyde emissions from Turbine #2 will be less than 1.0 tpy, and facility emissions of formaldehyde will be less than 2.6 tpy, significantly below the major source threshold of 10 tpy.

The Department finds the use of good combustion practices and controls, such as those inherent to the SoLoNO_xTM combustion system, represents BACT for emissions of HAP from Turbine #2.

7. Summary of Emission Limits

Except during periods of startup, shutdown, and transient events, Turbine #2 shall each not exceed the following emissions limits.

Pollutant	Emission Limit	Emission Limit	Emission Limit	Citation
	T > 0 °F	0 °F ≥ T > -20 °F	T ≤ -20 °F	
PM	0.40 lb/hr	0.41 lb/hr		06-096 C.M.R. ch. 115, BACT
PM ₁₀	0.40 lb/hr	0.41 lb/hr		
SO ₂	0.34 lb/hr	0.35 lb/hr		
NO _x	9 ppmdv @ 15% O ₂	–	–	40 C.F.R. Part 60, Subpart KKKK
	–	150 ppmdv @ 15% O ₂	150 ppmdv @ 15% O ₂	
	1.98 lb/hr	9.44 lb/hr	26.96 lb/hr	06-096 C.M.R. ch. 115, BACT
CO	3.35 lb/hr	13.68 lb/hr	20.52 lb/hr	
VOC	0.42 lb/hr	0.86 lb/hr	1.28 lb/hr	

Visible emissions from Turbine #2 shall not exceed 10% opacity on a six-minute block average basis.

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

M&N is subject to *Standards of Performance for Crude Oil and Natural Gas Facilities which Construction, Modification or Reconstruction Commenced After September 18, 2015*, 40 C.F.R. Part 60, Subpart OOOOa. This subpart establishes emission standards for the control of greenhouse gases (GHG) at a number of different types of facilities.

The facility is not subject to requirements for applicable units defined in §§ 60.5365a(a) through (i) for the following reasons: The facility is not a well affected facility. Turbine #2 is not a centrifugal compressor using a wet seal nor a reciprocating compressor. The new pneumatic controller will not have a natural gas bleed rate greater than 6 scfh. The facility does not contain any new, modified, or reconstructed storage vessels, and the facility is not a natural gas processing plant.

However, the facility is a compressor station permitting the installation of a new compressor. Therefore, the collection of fugitive emissions components at the station are considered affected equipment per § 60.5365a(j).

M&N is subject to requirements to limit emissions of methane and VOC by complying with the requirements of § 60.5397a to monitor fugitive emission components, repair sources of fugitive emissions, and perform recordkeeping and reporting. These provisions are commonly referred to as Leak Detection and Repair (LDAR).

On June 16, 2017, EPA proposed to stay for a period of time certain requirements contained within Subpart OOOOa, including the LDAR requirements that M&N is subject to. The intent of the stay was to provide time to complete rulemaking to address issues for which EPA has granted reconsideration. Although EPA continues to move forward with rulemaking, the stay was never finalized and the provisions currently remain in effect.

Due to the currently fluid nature of the LDAR requirements, they are incorporated into this license by reference only. M&N shall comply with the applicable requirements of the most current version 40 C.F.R. Part 60, Subpart OOOOa.

D. Monitoring Changes to Turbine #1

In M&N's current air emission license, Turbine #1 is prohibited from operating at gas producer speeds less than 90% except for periods of startup and shutdown. Gas producer speed is an indicator of turbine load, and this requirement was originally intended to prevent the turbine from operating without SoLoNO_xTM functioning as expected. However, gas producer speed is an imprecise measurement of load and also does not take into account potential transient events. Therefore, M&N has requested that this monitoring requirement be removed and replaced with monitoring the SoLoNO_xTM system for Enabled/Disabled status and whether it is Active/Inactive similar to Turbine #2.

Collecting this additional data for Turbine #1 will require retrofitting the existing monitoring system. Therefore, M&N has requested that the change in monitoring take effect concurrent with initial startup of Turbine #2 to allow time to get this work done.

The Department approves this request. Turbine #1 shall continue to be limited to a gas producer speed of not less than 90% demonstrated through the use of a programming interlock and verified through continuous records of gas producer speed until such time as monitoring of the SoLoNO_xTM status (Enabled/Disabled and Active/Inactive) is available but no later than initial startup of Turbine #2.

E. Boiler #2

M&N has proposed replacing Boiler #1, used for facility heating, with Boiler #2. Boiler #2 is a new natural gas-fired boiler rated at 4.7 MMBtu/hr.

1. BACT Findings

The BACT emission limits for Boiler #2 were based on the following:

- PM/PM₁₀ – 7.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- SO₂ – 5.71 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98 and assumes 2 grains of sulfur per 100 scf
- NO_x – 100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
- CO – 84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
- VOC – 8.18 lb/MMscf based on AP-42 Table 1.4-3 dated 7/98
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Boiler #2 are the following:

Unit	Pollutant	lb/MMBtu
Boiler #2	PM	0.007

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #2	0.04	0.04	0.03	0.46	0.39	0.04

Visible emissions from Boiler #2 shall not exceed 10% opacity on a six-minute block average basis.

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

Due to its size, Boiler #2 is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c(a)]

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

National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources, 40 C.F.R. Part 63, Subpart JJJJJ, is not applicable to gas-fired boilers.

F. Generator #1

M&N operates one emergency generator (Generator #1). Generator #1 is a gen set consisting of an engine and an electrical generator. It has an engine with a nominal rating of 5.02 MMBtu/hr (395 kW) and fires natural gas.

Generator #1 is subject to *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. Generator #1 was previously listed as an existing stationary RICE. However, Generator #1 is considered a new stationary RICE located at an area source of HAP emissions because construction commenced after June 12, 2006.

Per § 63.6590(c)(1), new stationary, spark ignition RICE are required to meet the requirements of Subpart ZZZZ by complying with the applicable requirements of *Standards of Performance for Spark Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart JJJJ. However, Subpart JJJJ has no applicable requirements for Generator #1 since it is an emergency engine which was manufactured prior to January 1, 2009. Therefore, there are no applicable requirements for Generator #1 under 40 C.F.R. Part 63, Subpart ZZZZ either. The Order section of this license has been updated to reflect this change.

G. Updates to Emission Calculation Methodology

M&N has requested several updates to how annual emissions are calculated for compliance purposes.

1. Startup and Shutdown Emissions for Turbine #1

Previously M&N assumed 65 startup and shutdown events per year. With the expected operational changes involved with the Portland XPress Project, the number of expected startup and shutdown events is being increased to 156 per year.

M&N bases emissions from the existing Taurus 70 turbine (Turbine #1) during startup and shutdown on guidance provided by the vendor. Recently the vendor has updated their guidance resulting in a slight decrease in the short-term emission rate for NO_x and a slight increase in the short-term emission rates for CO and VOC. M&N shall use the vendor-supplied guidance relied upon in the most recent permit application for calculating emissions from Turbine #1 during periods of startup and shutdown.

2. Basis for SO₂ Emissions

Previously, M&N calculated emissions of SO₂ from the station's combustion equipment based on the average sulfur content of natural gas. M&N has requested that this be changed to instead conservatively reflect the maximum sulfur content allowed by the gas tariff sheet (2 grains per 100 scf). This is a change in calculation methodology only and does not represent any change in actual emissions.

3. Hours of Operation at Low Temperatures for Turbine #1

Previously, M&N's annual emissions were calculated based on assumed operation of up to 21 hours per year at temperatures below 0 °F. M&N has requested that this be updated to assume 120 hours per year of operation between -20 °F and 0 °F and one hour per year of operation below -20 °F based on updated meteorological data. This is a change in calculation methodology only and does not represent any change in actual emissions.

4. Gas Releases and Fugitive Emissions

Gas releases occur during startup, shutdown, and maintenance activities. The changes to the facility due to the Portland XPress Project result in an increase in potential gas releases associated with the new turbine and gas cooling. There is also a potential increase in fugitive emissions due to new piping components associated with the new turbine and gas cooling piping tie-in.

In addition, M&N has updated their calculations of gas releases and fugitive emissions based on updated approaches to estimating gas release volumes for similar sized stations and a statistical analysis of available gas quality data. These changes are changes to the calculation methodology only and do not represent a change to actual emissions.

H. Emissions Statement

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

1. The amount of natural gas fired in each unit on a monthly basis;
2. Calculations of emissions of all regulated pollutants from each emissions unit on a calendar year total basis;
3. Calculations of the VOC and/or HAP emissions from gas releases and fugitive emissions on a calendar year total basis; and
4. Hours of operation for each emission unit on a monthly basis.

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

I. 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:

- Operation of Turbine #1 and #2 for 8,760 hr/year each, assuming 120 hr/year each of operation between -20 °F and 0 °F and one hour per year each of operation below -20 °F;
- 156 startup and shutdown events per year (each) for Turbines #1 and #2;
- Operation of Boiler #2 for 8,760 hr/year; and
- Operation of Generator #1 for 100 hr/year.

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	2.5	2.5	2.1	21.3	36.5	4.6
Turbine #2	1.7	1.7	1.4	8.8	27.9	2.6
Boiler #2	0.1	0.1	0.1	1.9	1.6	0.2
Generator #1	–	–	–	0.1	0.1	0.1
Gas Releases	–	–	–	–	–	23.4
Fugitive	–	–	–	–	–	6.1
Total TPY	4.3	4.3	3.6	32.1	66.1	37.0

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

A. Overview

A refined modeling analysis was performed to show that emissions from M&N, in conjunction with other sources, will not cause or contribute to violations of National Ambient Air Quality Standards (NAAQS) for SO₂, PM₁₀, PM_{2.5}, NO₂ or CO or to Class II increments for SO₂, PM₁₀, PM_{2.5} or NO₂.

Since M&N is a minor source, it has been determined by MEDEP-BAQ that an assessment of Class I Air Quality Related Values (AQRVs) is not required.

B. Model Inputs

The American Meteorological Society USEPA Dispersion Model (AERMOD) was used to address NAAQS and increment impacts 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 good engineering practices (GEP) stack heights.

All modeling was performed in accordance with all applicable requirements of the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) and the United States Environmental Protection Agency (USEPA). The most-recent regulatory version of the AERMOD model and its associated processors were used to conduct the analyses.

A valid five-year hourly off-site meteorological database was used in the AERMOD refined modeling analysis. Automated Surfaces Observation System (ASOS) wind data was collected at height of 10 meters at the Portsmouth International Airport National Weather Service (NWS) meteorological monitoring site during the five-year period 2010 - 2014. The following parameters and their associated heights were as follows:

TABLE III-1 : Meteorological Parameters and Collection Heights

Parameter	Sensor Height(s)
Scalar Wind Speed	10 meters
Scalar Wind Direction	10 meters
Temperature	2 meters

Each year of meteorological data met the 90% data recovery requirement, both singularly and jointly.

All missing data were interpolated or coded as missing, per USEPA guidance.

The surface meteorological data was combined with concurrent hourly cloud cover and upper-air data obtained from the Gray National Weather Service. Missing cloud cover and/or upper-air data values were interpolated or coded as missing, per USEPA guidance.

All necessary representative micrometeorological surface variables for inclusion into the American Meteorological Society USEPA Meteorological processor (AERMET) (surface roughness, Bowen ratio and albedo) were calculated using the AERSURFACE utility program and from procedures recommended by USEPA.

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

TABLE III-2 : M&N Point Source Stack Parameters

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						
• M&N Solar Taurus 70	18.00	12.97	34.00	2.58	354,360	4,778,119
• M&N Solar Centaur 50	18.00	18.29	34.00	1.22	354,388	4,778,141
2012 BASELINE (PM_{2.5} INCREMENT)						
• M&N conservatively assumed no credit for any sources existing in the 2012 baseline year.						
1987 BASELINE (NO₂ INCREMENT)						
• M&N did not exist during the 1987 baseline year, no NO ₂ credits to be taken.						
1977 BASELINE (SO₂/PM₁₀ INCREMENT)						
• M&N did not exist during the 1977 baseline year, no SO ₂ /PM ₁₀ credits to be taken.						

Emission parameters for M&N NAAQS and increment modeling are listed in Table III-3. Emission parameters are based on the maximum (100%) operation for each turbine, with refined modeling scenarios representing the following ambient temperatures: 100°F, 45°F and 0°F.

For the purpose of determining maximum predicted impacts, the following assumptions were used:

- NO_x emissions were assumed to convert to NO₂ using USEPA's Tier II Ambient Ratio Method (ARM2);
- All particulate emissions were conservatively assumed to convert to PM₁₀ and PM_{2.5}

TABLE III-3 : Stack Emission Parameters

Stack	Averaging Periods	SO ₂ (g/s)	PM ₁₀ /PM _{2.5} (g/s)	NO _x (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
MAXIMUM LICENSE ALLOWED							
• M&N Solar Taurus 70 – 0°F	All	0.07	0.08	0.67	0.68	858.00	12.53
• M&N Solar Centaur 50 – 0°F	Short Term	0.04	0.05	0.26	0.44	721.00	37.47
• M&N Solar Centaur 50 – 45°F	All	0.04	0.04	0.24	0.40	773.00	36.03
• M&N Solar Centaur 50 – 100°F	Short Term	0.03	0.04	0.20	0.34	811.00	32.74
• M&N Solar Centaur 50 – SU/SD	Short Term	-	-	0.03	2.49	704.00	29.11
2012 BASELINE (PM_{2.5} INCREMENT)							
• M&N conservatively assumed no credit for any sources existing in the 2012 baseline year.							
1987 BASELINE (NO₂ INCREMENT)							
• M&N did not exist during the 1987 baseline year, no NO ₂ credits to be taken.							
1977 BASELINE (SO₂/PM₁₀ INCREMENT)							
• M&N did not exist during the 1977 baseline year, no SO ₂ /PM ₁₀ credits to be taken.							

C. Single Source Modeling Impacts

The significant impact model results for M&N alone are shown in Table III-4. Maximum predicted impacts that exceed their respective significance level are indicated in boldface type. For comparison to the Class II significance levels, the impacts for 1-hour SO₂, 1-hour NO₂, 24-hour PM_{2.5} and annual PM_{2.5} were conservatively based on the maximum High-1st-High predicted values, averaged over five-years of meteorological data. All other pollutants/averaging periods were conservatively based on their maximum High-1st-High predicted values. The maximum impacts at ambient temperatures of 100 °F, 45 °F or 0 °F were compared to the short-term significance levels. Only impacts at the average ambient temperature of 45 °F were compared to the annual significance levels. No additional refined modeling was required for pollutants that did not exceed their respective significance levels.

TABLE III-4 : Maximum AERMOD Significant Impact Results from M&N

Pollutant	Averaging Period	Max Impact ($\mu\text{g}/\text{m}^3$)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Class II Significance Level ($\mu\text{g}/\text{m}^3$)	Load Case
SO ₂	1-hour	1.44	354,275	4,778,137	25.33	7.9	100%, 0°F
	3-hour	1.37	354,280	4,778,129	25.30	25	100%, 0°F
	24-hour	0.39	354,280	4,778,129	25.30	5	100%, 0°F
	Annual	0.02	354,429	4,778,174	14.68	1	100%, 45°F
PM ₁₀	24-hour	0.46	354,280	4,778,129	25.30	5	100%, 0°F
	Annual	0.03	354,429	4,778,174	14.68	1	100%, 45°F
PM _{2.5}	24-hour	0.32	354,275	4,778,137	25.33	1.2	100%, 0°F
	Annual	0.03	354,429	4,778,174	14.68	0.2	100%, 45°F
NO ₂	1-hour	7.82	354,269	4,778,145	25.21	7.5	100%, 0°F
	Annual	0.31	354,429	4,778,174	14.68	1	100%, 45°F
CO	1-hour	96.29	354,275	4,778,137	25.33	2,000	SU/SD
	8-hour	63.85	354,281	4,778,129	25.30	500	SU/SD

D. Combined Source Modeling Impacts

As indicated in boldface type in Table III-4, the maximum predicted impacts for 1-hour NO₂ exceed the significance level, therefore other sources not explicitly included in the modeling analysis must be accounted for by using representative 1-hour NO₂ background concentrations for the area.

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

TABLE III-5 : Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu\text{g}/\text{m}^3$)	Monitoring Site
NO ₂	1-hour	38	Portland

MEDEP examined other nearby sources to determine if any impacts would be significant in or near the M&N significant impact area. Due to the location of the M&N facility, extent of the predicted significant impact area and other nearby source's emissions, MEDEP has determined that no other sources would be included in combined-source refined modeling.

The maximum AERMOD modeled impacts, which was explicitly normalized to the form of the respective NAAQS, was added with the conservative rural background concentrations to demonstrate compliance with the NAAQS, as shown in Table III-6.

Because the 1-hour NO₂ impact using this method meets the NAAQS, no further NAAQS modeling analyses need to be performed.

TABLE III-6 : Maximum Combined Source Impacts (µg/m³)

Pollutant	Averaging Period	Max Impact (µg/m ³)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Back-Ground (µg/m ³)	Total Impact (µg/m ³)	NAAQS (µg/m ³)
NO ₂	1-hour	19.15	354,287	4,778,121	25.17	38	57.15	188

E. Class II Increment

The AERMOD model was used to predict maximum Class II increment impacts.

Results of the Class II increment analysis are shown in Tables III-7. All modeled maximum increment impacts were below all increment standards. Because all predicted increment impacts meet increment standards, no additional Class II SO₂, PM₁₀, PM_{2.5} and NO₂ increment modeling needed to be performed.

TABLE III-7 : Class II Increment Consumption

Pollutant	Averaging Period	Max Impact (µg/m ³)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Class II Increment (µg/m ³)
SO ₂	3-hour	1.37	354,280	4,778,129	25.30	512
	24-hour	0.39	354,280	4,778,129	25.30	91
	Annual	0.02	354,429	4,778,174	14.68	20
PM ₁₀	24-hour	0.46	354,280	4,778,129	25.30	30
	Annual	0.03	354,429	4,778,174	14.68	17
PM _{2.5}	24-hour	0.31	354,275	4,778,137	25.33	9
	Annual	0.03	354,429	4,778,174	14.68	4
NO ₂	Annual	0.31	354,429	4,778,174	14.68	25

F. Summary

In summary, it has been demonstrated that M&N will not cause or contribute to a violation of any SO₂, PM₁₀, PM_{2.5}, NO₂ or CO NAAQS or to Class II increments for SO₂, PM₁₀, PM_{2.5} or NO₂.

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 Amendment A-855-71-J-A subject to the conditions found in Air Emission License A-855-71-I-R and the following conditions.

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

SPECIFIC CONDITIONS

M&N is licensed to install and operate Turbine #2. The following shall replace Condition (16) of Air Emission License A-855-71-I-R upon initial startup of Turbine #2:

(16) Turbines #1 and #2

- A. Turbines #1 and #2 shall only fire pipeline-quality natural gas.
 [06-096 C.M.R. ch. 115, BACT]
- B. Except during periods of startup, shutdown, and transient events, Turbine #1 shall not exceed the following emission limits:

Pollutant	Emission Limit T > 0 °F	Emission Limit 0 °F ≥ T > -20 °F	Emission Limit T ≤ -20 °F	Citation
PM	0.65 lb/hr	0.68 lb/hr		06-096 C.M.R. ch. 115, BPT
PM ₁₀	0.65 lb/hr	0.68 lb/hr		
SO ₂	0.55 lb/hr	0.58 lb/hr		
NO _x	15 ppmdv @ 15% O ₂	–	–	40 C.F.R. Part 60, Subpart KKKK
	–	150 ppmdv @ 15% O ₂	150 ppmdv @ 15% O ₂	
	–	5.34 lb/hr	15.74 lb/hr	44.97 lb/hr
CO	5.42 lb/hr	22.81 lb/hr	34.22 lb/hr	
VOC	0.68 lb/hr	1.43 lb/hr	2.14 lb/hr	

C. Except during periods of startup, shutdown, and transient events, Turbine #2 shall not exceed the following emission limits:

Pollutant	Emission Limit T > 0 °F	Emission Limit 0 °F ≥ T > -20 °F	Emission Limit T ≤ -20 °F	Citation
PM	0.40 lb/hr	0.41 lb/hr		06-096 C.M.R. ch. 115, BACT
PM ₁₀	0.40 lb/hr	0.41 lb/hr		
SO ₂	0.34 lb/hr	0.35 lb/hr		
NO _x	9 ppmdv @ 15% O ₂	—	—	40 C.F.R. Part 60, Subpart KKKK
	—	150 ppmdv @ 15% O ₂	150 ppmdv @ 15% O ₂	
	1.98 lb/hr	9.44 lb/hr	26.96 lb/hr	06-096 C.M.R. ch. 115, BACT
CO	3.35 lb/hr	13.68 lb/hr	20.52 lb/hr	
VOC	0.42 lb/hr	0.86 lb/hr	1.28 lb/hr	

D. Visible emissions from Turbines #1 and #2 shall each not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. M&N shall keep records of the number of hours during the calendar year that the ambient temperature is below at or below 0 °F and at or below -20 °F. For any gaps in M&N's temperature data, it may utilize meteorological data from an appropriate representative location. [06-096 C.M.R. ch. 115, BACT]

F. M&N shall not operate Turbines #1 or #2 in SoLoNO_xTM Disabled mode except for periods of startup, shutdown, and low temperature. Compliance shall be demonstrated by continuously monitoring the SoLoNO_xTM system and whether it is Enabled/Disabled. [06-096 C.M.R. ch. 115, BACT]

G. M&N shall continuously monitor the SoLoNO_xTM system on Turbines #1 and #2 during all operating times, whether it is Active/Inactive, and use that information to determine the frequency and duration of transient events. This information shall be used in demonstrating compliance with the facility's annual emission limits.
 [06-096 C.M.R. ch. 115, BACT]

H. Performance Testing

1. M&N shall conduct an initial performance test on Turbine #2 for NO_x within 60 days after achieving the maximum production rate but not later than 180 days after initial startup. [40 C.F.R. §§ 60.8 and 60.4400(a)]
2. M&N shall conduct performance testing on Turbines #1 and #2 (each) for NO_x every two years (no more than 26 calendar months between tests).
 [40 C.F.R. § 60.4340(a)]

3. Performance testing shall be conducted at any load condition within plus or minus 25% of 100% of peak load. M&N shall conduct three separate test runs for each performance test. The minimum run time shall be 20 minutes. The ambient temperature shall be greater than 0 °F during the performance test.
[40 C.F.R. § 60.4400(b)]
- I. M&N shall keep documentation of all maintenance and repairs (both planned and unplanned) performed on Turbines #1 and #2. 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 C.M.R. ch. 115, BACT]
- J. Turbines #1 and #2 are subject to, and shall comply with, the applicable requirements of 40 C.F.R. Part 60, Subpart KKKK.
- K. 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 C.F.R. § 60.4365(a).
- L. M&N shall operate and maintain Turbines #1 and #2 and their associated air pollution control equipment and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunction. [40 C.F.R. § 60.4333(a)]
- M. M&N may install like-kind manufacturer-supplied replacement components for the turbines that occur 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 New Source Performance Standard provisions with respect to replacement of the turbine or any components.
[06-096 C.M.R. ch. 115, BACT]

N. Parameter Monitors

1. M&N shall monitor and record the following. These are considered Parameter Monitors. [06-096 C.M.R. ch. 115, BACT]

Parameter	Monitor	Record Monitor Data	Total	Notes
Natural Gas Fuel Flow Rate to Turbine #1 (standard cubic feet input)	Continuously	Continuously	Monthly	a
Natural Gas Fuel Flow Rate to Turbine #2 (standard cubic feet input)	Continuously	Continuously	Monthly	a
SoLoNO _x TM Enabled/Disabled Status on Turbine #1	Continuously (status)	Continuously (minutes)	Monthly (minutes)	b
SoLoNO _x TM Enabled/Disabled Status on Turbine #2	Continuously (status)	Continuously (minutes)	Monthly (minutes)	b
SoLoNO _x TM Active/Inactive Status on Turbine #1	Continuously (status)	Continuously (minutes)	Monthly (minutes)	b
SoLoNO _x TM Active/Inactive Status on Turbine #2	Continuously (status)	Continuously (minutes)	Monthly (minutes)	b

Notes:

- a. For this parameter, Continuously means the total fuel flow will be recorded at least once per 15-minute period.
 - b. For this parameter, Continuously means the total minutes for each status will be recorded at least once per 15-minute period.
2. 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 parameter monitor 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 C.M.R. ch. 115, BACT]

The following replaces Conditions (17) through (25) of Air Emission License A-855-71-I-R.

The conditions pertaining to Boiler #1, i.e., Condition (21) of Air Emission License A-855-71-I-R, shall remain in effect until startup of Boiler #2. All other conditions take effect upon issuance of this air emission license amendment.

(17) Gas Releases and Fugitive Emissions

A. M&N shall maintain a log of all gas releases and ESD events that includes the following information:

1. Date of the event;
2. Estimated or actual event start time;
3. Estimated or actual event duration;
4. Event source;
5. Event type (shutdown, maintenance, testing, or malfunction);
6. Description of event;
7. Estimate of the amount of natural gas vented;
8. Estimate of VOC density of the released gas; and
9. Calculation of the tons of VOC emitted based on the VOC content of the gas released.

[06-096 CMR 115, BPT]

B. 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]

C. M&N shall comply with the applicable requirements of the most current version of 40 C.F.R. Part 60, Subpart OOOOa.

(18) Boiler #2

A. Boiler #2 shall fire only pipeline quality natural gas. [06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #2	PM	0.007	06-096 C.M.R. ch. 115, BACT

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

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #2	0.04	0.04	0.03	0.46	0.39	0.04

D. Visible emissions from Boiler #2 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(19) **Generator #1**

A. Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BPT]

B. Generator #1 shall 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 in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity. [06-096 C.M.R. ch. 115, BPT]

C. M&N shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [06-096 C.M.R. ch. 115, BPT]

D. Emissions shall not exceed the following:

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

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

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.60	0.60	neg	2.58	2.26	0.97

F. Visible emissions from Generator #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(20) **Annual Emissions Limits**

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

Pollutant	Tons/year
PM	4.3
PM ₁₀	4.3
SO ₂	3.6
NO _x	32.1
CO	66.1
VOC	37.0
Single HAP	9.9
Total HAP	24.9

- B. As part of documenting compliance with the annual emission limits listed above, M&N shall include turbine emissions from startup, shutdown, and transient events and calculate turbine emissions based on the following:

Mode	Calculate Emissions Using Emission Factors Based On...
Startup	The emissions data supplied by the turbine manufacturer at the time of the most recent permit application.
Shutdown	The emissions data supplied by the turbine manufacturer at the time of the most recent permit application.
Normal Operation	Licensed emission limits for temperatures above 0 °F
Low Temperature	Licensed emission limits for appropriate temperature range
Transient Event	Licensed emission limits for temperatures less than or equal to -20 °F

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

- C. 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 C.M.R. ch. 115, BACT]

(21) **Parts Washers**

Parts washers at M&N are subject to *Solvent Cleaners*, 06-096 C.M.R. ch. 130.

- A. M&N shall keep records of the amount of solvent added to each parts washer.
[06-096 C.M.R. ch. 115, BPT]
- B. The following are exempt from the requirements of 06-096 C.M.R. ch. 130 [06-096 C.M.R. ch. 130]:
 1. Solvent cleaners using less than two liters (68 oz.) of cleaning solvent with a vapor pressure of 1.00 mmHg, or less, at 20° C (68° F);
 2. Wipe cleaning; and,
 3. Cold cleaning machines using solvents containing less than or equal to 5% VOC by weight.
- C. The following standards apply to cold cleaning machines that are applicable sources under 06-096 C.M.R. ch. 130.
 1. M&N shall attach a permanent conspicuous label to each unit summarizing the following operational standards:
 - a. Waste solvent shall be collected and stored in closed containers.
 - b. 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.
 - c. 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.
 - d. The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
 - e. Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the parts washer.
 - f. 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.
 - g. Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
 - h. Work area fans shall not blow across the opening of the parts washer unit.
 - i. 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.
 3. Each parts washer shall be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent.
[06-096 C.M.R. ch. 130]

(22) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including roadways) shall not exceed 20% opacity on a five-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(23) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

(24) **Annual Emission Statement**

A. In accordance with *Emission Statements*, 06-096 C.M.R. ch. 137, M&N shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 C.M.R. ch. 137.

B. M&N shall keep the following records in order to comply with 06-096 C.M.R. ch. 137:

1. The amount of natural gas fired in each unit on a monthly basis;
2. Calculations of emissions of all regulated pollutants from each emissions unit on a calendar year total basis;
3. Calculations of the VOC and/or HAP emissions from gas releases and fugitive emissions on a calendar year total basis; and
4. Hours of operation for each emission unit on a monthly basis.
[06-096 C.M.R. ch. 137]

C. Beginning in reporting year 2020 and every third year thereafter, M&N shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). M&N shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

Maritimes & Northeast Pipeline, L.L.C.
York County
Eliot, Maine
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Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

- (25) 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. § 605).

DONE AND DATED IN AUGUSTA, MAINE THIS 3 DAY OF April, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Marc Allen Robert Core for*
GERALD D. REID, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-855-71-I-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 6/29/18

Date of application acceptance: 6/29/18

Date filed with the Board of Environmental Protection:

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

