



DEPARTMENT ORDER

**Rumford Power LLC
 Oxford County
 Rumford, Maine
 A-724-77-3-M**

**Departmental
 Findings of Fact and Order
 New Source Review
 NSR #3**

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 (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Rumford Power LLC
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Revision
NAICS CODES	221112
NATURE OF BUSINESS	Electric Power Generation
FACILITY LOCATION	43 Industrial Park Road, Rumford, Maine

B. NSR License Description

Rumford Power LLC (RP) has requested a New Source Review (NSR) license amendment to correct an error in calculating emissions increases associated with New Source Review (NSR) minor modification A-724-77-2-A (NSR #2) which is a recently licensed project that allows RP to modify its Combustion Turbine to allow the turbine to fire distillate fuel in addition to natural gas (ULSD Project). This NSR amendment (NSR #3) should be read in conjunction with NSR #2.

C. Emission Equipment

The following equipment is addressed in this NSR license:

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Max. Firing Rate	Fuel Type	Output Capacity (MW)	Mfr. Date	Inst. Date
Combustion Turbine	1,975	1.94 Mcf/hr	Natural Gas	197	1998	1999
	2,111	15,134 gal/hr	Distillate Fuel			

D. Revision Description

On November 14, 2023, the Department issued New Source Review (NSR) minor modification A-724-77-2-A (NSR #2) pursuant to 06-096 Code of Maine Rules (C.M.R.) ch. 115 to RP to add limited firing of distillate fuel in the Combustion Turbine. It was subsequently noticed that the 24-month period used to calculate baseline actual emissions (BAE) was outside the lookback period allowed for electric utility steam generating units (EUSGUs). Unlike other facilities that are allowed a 10-year lookback period, EUSGUs are restricted to a five-year lookback period.

RP has submitted a request for a NSR minor revision to update the BAE used in NSR #2 and recalculate the project's emissions increases used to classify the application as an NSR minor modification. Following is that revised analysis.

The modification of a major source is considered a major or minor modification based on whether or not expected emissions increases exceed the "Significant Emission Increase" levels as given in *Definitions Regulation*, 06-096 C.M.R. ch. 100. For a major stationary source, the expected emissions increase from each new, modified, or affected unit may be calculated as equal to the difference between the post-modification projected actual emissions and the baseline actual emissions for each NSR regulated pollutant.

1. Baseline Actual Emissions

BAE for EUSGUs are equal to the average annual emissions from any consecutive 24-month period within the five years prior to submittal of a complete license application. RP has proposed using calendar years 2020 and 2021 as the 24-month baseline period from which to determine baseline actual emissions for all pollutants for emission units affected as part of this project.

BAE for the Combustion Turbine are consistent with emissions statements submitted to the Department in accordance with 06-096 C.M.R. ch. 137. Emissions of particulate matter were based on previous stack testing¹. Emissions of PM₁₀ and PM_{2.5} were based on filterable PM from previous stack testing plus condensable PM from AP-42, Table 3.1-2a. Emissions of SO₂ were based on the quantity of natural gas combusted and records of sulfur content from the supplier. Emissions of NO_x and CO were based on data from continuous emissions monitoring systems (CEMS). Emissions of VOC were based on standard emission factors.

¹ A third-party auditing firm has reviewed the initial PM stack test report and determined that the correct emission rate should have been 0.48 lb/hr instead of the previously reported 0.21 lb/hr. This accounts for the difference in PM emissions between this license and A-724-77-1-A (issued 5/7/2020).

The results of this baseline analysis are presented in the table below.

Baseline Actual Emissions (1/2020 – 12/2021 Average)

Equipment	PM (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	SO₂ (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Combustion Turbine	0.33	4.67	4.67	0.56	16.10	35.85	0.65

2. Projected Actual Emissions

Projected actual emissions (PAE) are the maximum actual annual emissions anticipated to occur in any one of the five years (12-month periods) following the date existing units resume regular operation after the project or any one 12-month period in the ten years following if the project involves increasing the unit's design capacity or its potential to emit of a regulated pollutant.

In determining PAE from the Combustion Turbine, RP considered emissions resulting from both future periods of natural gas firing and emissions resulting from the firing of distillate fuel.

a. Natural Gas Firing

PAE from firing natural gas were calculated by first quantifying the average annual heat input to the Combustion Turbine during 2015/2016. RP then conservatively increased that heat input by three percent to account for the Repair for Performance project addressed in Air Emission License A-724-77-1-A (5/7/2020) and also assumed the same frequency of startup and shutdown events as in 2015/2016. RP then developed emission factors (lb/MMBtu) for each pollutant in each baseline year by taking actual annual emissions and dividing by the total heat input to the Combustion Turbine during each year. The highest emission factor for each pollutant for either year (2015 or 2016) was then applied to the projected actual heat input to the Combustion Turbine.

b. Distillate Fuel Firing

PAE from firing distillate fuel were calculated by taking the emission limits from the Best Available Control Technology (BACT) analysis and converting them to lb/hr emission factors. The baseload emissions were determined by multiplying the lb/hr emission factor by the maximum proposed operation of 500 hours/year.

For periods of startup and shutdown, RP utilized estimated "lb/event" data, provided by engineering studies, to quantify any additional emissions associated with these events. RP estimates that there could be 25 startup/shutdown events,

when firing distillate fuel, each year. There are no expected additional emissions of PM, PM₁₀, PM_{2.5}, or SO₂ over that of normal (baseload) operation.

Projected actual emissions from the affected equipment are shown below.

Projected Actual Emissions

Equipment	PM (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	SO₂ (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Combustion Turbine (<i>natural gas</i>)	0.56	6.90	6.90	0.87	34.33	88.07	0.94
Combustion Turbine (<i>distillate fuel – baseload</i>)	8.97	8.97	8.97	0.79	10.26	6.25	1.08
Combustion Turbine (<i>distillate fuel – SU/SD</i>)	–	–	–	–	15.34	15.53	1.89
Total	9.53	15.87	15.87	1.66	59.93	109.85	3.91

3. Emission Adjustments

In determining projected actual emissions, RP excluded increases in emissions that the existing equipment could have accommodated during the baseline period and are unrelated to the current project. This is known as the Demand Growth Exclusion.

Operation of the Combustion Turbine is almost entirely market driven. Adding distillate fuel as an alternative fuel for limited use will allow RP to operate the Combustion Turbine should natural gas be curtailed or if use of natural gas is not economically advantageous. The addition of distillate fuel will have no impact on the future use of the Combustion Turbine when firing natural gas. Any future increase in the utilization of the Combustion Turbine when firing natural gas would be a reflection of a potential increase in demand and unrelated to the ULSD Project.

Therefore, RP proposes that excludable emissions be those emissions resulting from projected natural gas combustion that exceed baseline emissions. The Department agrees with this assessment.

Based on the analysis outlined above, the following emissions are excludable under the Demand Grown Exclusion:

Demand Growth Exclusion Emissions Adjustments

Equipment	PM (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	SO₂ (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Combustion Turbine (BAE)	0.33	4.67	4.67	0.56	16.10	35.85	0.65
Combustion Turbine (PAE for natural gas)	0.56	6.90	6.90	0.87	34.33	88.07	0.94
Excludable Emissions	0.23	2.55	2.55	0.31	18.23	52.22	0.29

4. Emissions Increases

Emissions increases are calculated by subtracting BAE and excludable emissions from the PAE. The emission increase is then compared to the significant emissions increase levels.

Pollutant	Baseline Actual Emissions 2020 - 2021 (ton/year)	Projected Actual Emissions (ton/year)	Excludable Emissions (ton/year)	Emissions Increase (ton/year)	Significant Emissions Increase Levels (ton/year)
PM	0.33	9.53	0.23	8.97	25
PM ₁₀	4.67	15.87	2.23	8.97	15
PM _{2.5}	4.67	15.87	2.23	8.97	10
SO ₂	0.56	1.66	0.31	0.79	40
NO _x	16.10	59.93	18.23	25.60	40
CO	35.85	109.85	52.22	21.78	100
VOC	0.65	3.91	0.29	2.97	40

5. Classification

Since emissions increases do not exceed significant emissions increase levels, NSR #2 is still determined to be a minor modification under *Minor and Major Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115.

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 application submitted by RP does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The proposed revision is an update to the application classification for NSR #2. It does not change any licensed emission limits or result in any emissions increase. Therefore, this NSR license is determined to be a minor revision under *Minor and Major Source Air Emission License Regulations* 06-096 C.M.R. ch. 115. The procedures found in 06-096 C.M.R. ch. 115 can be utilized to process this application since the proposed revision not prohibited by the Part 70 air emission license. An application to incorporate the requirements of this NSR license into the Part 70 air emission license shall be submitted no later than 12 months from commencement of operations after the work associated with the ULSD Project is completed.

F. Annual Emissions

This license amendment will not change the facility's licensed annual emissions.

ORDER

The Department hereby grants New Source Review Minor Revision A-724-77-3-M pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific conditions below.

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.

Rumford Power LLC
Oxford County
Rumford, Maine
A-724-77-3-M

7

Departmental
Findings of Fact and Order
New Source Review
NSR #3

SPECIFIC CONDITIONS

- (1) RP shall submit an application to incorporate this NSR license amendment into the facility's Part 70 air emission license no later than 12 months from commencement of operations after the work associated with the ULSD Project is completed.
[06-096 C.M.R. ch. 140 § 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 2nd DAY OF MAY, 2024.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/2/2024

Date of application acceptance: 2/2/2024

Date filed with the Board of Environmental Protection:

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

FILED
MAY 02, 2024
State of Maine
Board of Environmental Protection