



DEPARTMENT ORDER

Daaquam Lumber Maine Inc.
Aroostook County
Masardis, Maine
A-165-77-4-A

Departmental
Findings of Fact and Order
New Source Review
NSR #4

FINDINGS OF FACT

After review of the air emission 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 (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Daaquam Lumber Maine Inc.
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	321113
NATURE OF BUSINESS	Lumber Manufacturer
FACILITY LOCATION	Rt 11, Masardis, Maine

B. NSR License Description

Daaquam Lumber Maine Inc. (Daaquam) has requested a New Source Review (NSR) license to install a micro-steam back-pressure turbine between Boiler #1 and downstream process equipment.

C. Emission Equipment

The following existing equipment is affected, but not modified, by this project:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (ton/hr)	Fuel Type	Stack #
Boiler #1	27.0	3.0	Biomass	1

D. Definitions

Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (*e.g.*, trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings). This definition also includes wood chips and processed pellets made from wood or other forest residues. Inclusion in this definition does not constitute a determination that the material is not considered a solid waste. Daaquam should consult with the Department before adding any new biomass type to its fuel mix.

E. Project Description

Daaquam has proposed the installation of a micro-steam back-pressure turbine in order to optimize the mill's energy efficiency. The turbine will harvest otherwise wasted energy by utilizing the enthalpy difference from the pressure drop between Daaquam's main boiler, Boiler #1, and downstream process equipment.

After an engineering analysis of the mill's existing steam loads and electrical demands, Daaquam has selected a 275 kW micro-steam turbine for this project. The unit will be used to reduce the steam pressure generated by Boiler #1 for use in process loads, mainly kilns, throughout the mill. The turbine will allow Daaquam to extract meaningful electrical energy and offset a portion of its current demand from the electric grid.

F. Application Classification

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

The application for the micro-steam turbine does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

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 Code of Maine Rules (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

Baseline actual emissions (BAE) are equal to the average annual emissions from any consecutive 24-month period within the ten years prior to submittal of a complete

license application. Daaquam has proposed using 01/2020 – 12/2021 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 existing modified and affected equipment are based on actual annual emissions reported to the Department through *Emissions Statements*, 06-096 C.M.R. ch. 137 with the following exceptions:

- a. Emissions of PM are not collected in the annual emissions report. PM emissions from all equipment were determined in a similar manner as the filterable portions of the PM₁₀ emissions.
- b. Emissions of PM₁₀ and PM_{2.5} in the annual emissions report are for the filterable portion only. Reported emissions of PM₁₀ and PM_{2.5} were adjusted to include emissions of condensable particulate matter.

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

Baseline Actual Emissions (01/2020 – 12/2021 Average)

Equipment	PM (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	SO₂ (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Boiler #1	26.50	26.50	26.50	0.74	14.50	52.50	1.50

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.

Affected equipment includes any new or physically modified equipment as well as upstream or downstream activities. The micro-steam turbine will not produce any emissions; however, its operation will increase steam demand on Boiler #1, resulting in more fuel fired. Therefore, Boiler #1 is considered affected equipment. Daaquam estimates an approximate 7.9% increase in fuel fired in Boiler #1 to support the turbine. This equates to an additional 1,625 tons of biomass above the baseline level fired annually. PAE for Boiler #1 has been based on this new estimated annual fuel usage and existing licensed emission limits.

Projected actual emissions from the affected equipment are shown below.

Projected Actual Emissions

Equipment	PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	SO ₂ (tpy)	NO _x (tpy)	CO (tpy)	VOC (tpy)
Boiler #1	28.63	28.63	28.63	0.81	15.91	57.27	1.62

3. Emissions Increases

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

Pollutant	Baseline Actual Emissions 01/2020 – 12/2021 (ton/year)	Projected Actual Emissions (ton/year)	Emissions Increase (ton/year)	Significant Emissions Increase Levels (ton/year)
PM	26.50	28.63	2.13	25
PM ₁₀	26.50	28.63	2.13	15
PM _{2.5}	26.50	28.63	2.13	10
SO ₂	0.74	0.81	0.07	40
NO _x	14.50	15.91	1.41	40
CO	52.50	57.27	4.77	100
VOC	1.50	1.62	0.12	40

4. Classification

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

II. NSR Minor Modification

A. Introduction

This NSR license authorizes the installation and operation of a micro-steam back-pressure turbine. The turbine will not directly generate any emissions; however, it will result in an increase in steam demand from Boiler #1. This NSR license does not seek to increase any emission or operating limits for Boiler #1.

B. Incorporation Into the Part 70 Air Emission License

Pursuant to *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a modification at the facility that has undergone NSR requirements or been processed

through 06-096 C.M.R. ch. 115, the source must apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5. An application to incorporate the requirements of this NSR license into the Part 70 air emission license has been submitted to the Department.

C. Annual Emissions

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

III. AMBIENT AIR QUALITY ANALYSIS

Daaquam previously submitted an ambient air quality impact analysis outlined in air emission license A-165-70-A-I (dated March 15, 2001) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (AAQS). An additional ambient air quality impact analysis is not required for this NSR 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,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants New Source Review License A-165-77-4-A 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 or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

- (1) Daaquam is authorized to install and operate a micro-steam back-pressure turbine as described in this NSR license. [06-096 C.M.R. ch. 115]

DONE AND DATED IN AUGUSTA, MAINE THIS 9th DAY OF June, 2023.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  _____ for
MELANIE LOYZIM, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: October 6, 2022

Date of application acceptance: October 18, 2022

Date filed with the Board of Environmental Protection:

This Order prepared by Benjamin Goundie, Bureau of Air Quality.

FILED
JUN 09, 2023
State of Maine
Board of Environmental
Protection