STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

Robbins Lumber, Inc. **Waldo County** **Searsmont, Maine** **A-156-77-4-M**	**Departmental** **Findings of Fact and Order** **New Source Review** **NSR #4**

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	Robbins Lumber, Inc. (Robbins Lumber)
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Revision
NAICS CODES	321912, 321113, 321999
NATURE OF BUSINESS	Lumber Manufacturing
FACILITY LOCATION	53 Ghent Road, Searsmont, Maine

B. NSR License Description

Although Robbins Lumber, Inc. is the owner of the facility, Georges River Energy, LLC, a wholly owned subsidiary of Robbins Lumber, operates the biomass cogeneration facility. References and requirements in this license for Robbins Lumber, Inc. will apply to both Georges River Energy, LLC and Robbins Lumber, Inc.

Robbins Lumber, Inc. (Robbins Lumber) has requested a New Source Review (NSR) license minor revision to extend emission limit applicability dates and stack testing requirement deadlines to allow more time for evaluation of boiler operating performance and optimization and control options to reduce nitrogen oxide (NO_x) and carbon monoxide (CO) emissions.

This amendment will not increase licensed emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

C. Emission Equipment

The following equipment is addressed in this NSR license:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Stack #
Biomass Boiler #3	167.3	~446 tons/day	Wood/ Biomass	3

D. Project Description

Due to the uncertainty of the ability to achieve the proposed NO_x BACT limit upon initial startup and commissioning of Biomass Boiler #3 and without the installation and operation of a selective non-catalytic reduction (SNCR) control system, the Department allowed Robbins Lumber to achieve the limit in two phases during the first year of operation of the unit. Initially, NO_x emissions from Biomass Boiler #3 were to be limited to 0.25 lb/MMBtu for a period of one year from the date of initial startup, until the final NO_x emission limit of 0.15 lb/MMBtu would take effect. Due to the inverse relationship between NO_x and CO, CO was initially limited to 0.60 lb/MMBtu during this same time period, until the final CO emission limit of 0.30 lb/MMBtu would take effect.

Although Robbins Lumber has been working to achieve the final licensed Biomass Boiler #3 NO_x and CO emission limits, it has not been able to achieve these levels consistently. Robbins Lumber has recently hired Wechsler to perform firebox modeling and engineering, to determine what modifications may be needed, and to add selective non-catalytic reduction (SNCR) controls if needed to meet the lower limits. Presently, Robbins Lumber is meeting the initial NO_x and CO emission limits of 0.25 lb/MMBtu and 0.60 lb/MMBtu, respectively.

Robbins Lumber achieved first fire of Biomass Boiler #3 on November 28, 2018 but did not achieve reliable and consistent firing rates until September 2019 due to a manufacturing defect of the turbine. Upon stabilizing operations of the boiler and turbine system, particulate matter (PM) and volatile organic compound (VOC) stack testing was completed in October 2019. Since that time, Robbins Lumber has continued to work to reduce NO_x and CO emissions to meet the lower NO_x and CO emission limits. Because KWM, the manufacturer of Biomass Boiler #3, is presently in bankruptcy proceedings and under creditor protection granted by the Courts, Robbins Lumber was not able to receive technical support from KMW to fine-tune the boiler's operations. In February 2020, Robbins Lumber initiated engagement with Wechsler, a boiler and pollution control specialty company. Plans for Wechsler to visit the Robbins Lumber facility and inspect the boiler were put on hold due to the State's COVID-19 Stay at Home and Travel Orders. In July 2020, Wechsler visited the facility and then issued a report and a scope of proposal

to assist Robbins Lumber with achieving its emissions requirements. Wechsler's Scope and Schedule was included in Robbins Lumber's application for this licensing action.

According to Wechsler's schedule, the boiler optimization and required changes are to be in place and commissioned by September 30, 2021. Robbins Lumber has requested the date by which the final emission limits of 0.15 lb/MMBtu for NO_x and 0.30 lb/MMBtu for CO would take effect be changed to September 30, 2021. Robbins Lumber has also requested that the Department extend the stack testing deadline to demonstrate compliance with the final NO_x and CO emission limits from November 28, 2020, to November 28, 2021.

Robbins Lumber has also requested the amendment of the reporting and testing schedule as follows: Robbins Lumber shall provide reports by February 28, 2021, conveying the results of pre-engineering studies and evaluation by Wechsler. By September 30, 2021, the physical modifications and commissioning shall be complete.

Below is the language found in A-156-77-3-A (June 30, 2017), 3G.(2)(d) & (e) and 3(H) (3) and (5). The language to be removed has been indicated using a strikethrough line.

(3) **Boiler #3**

G. Control Equipment

2. NO_x Control

d. If Robbins Lumber cannot demonstrate compliance with the NO_x limit of 0.15 lb/MMBtu without add-on controls, Robbins Lumber shall install and have operational an SNCR system ~~within 545 days from initial startup~~ by September 30, 2021. Until the SNCR is operational ~~but no later than 730 days from initial startup~~, NO_x emissions shall be limited to 0.25 lb/MMBtu and CO emissions shall be limited to 0.60 lb/MMBtu. Once the SNCR is operating and commissioned ~~operational~~, but no later than September 30, 2021, ~~but no later than 730 days after initial startup,~~ NO_x emissions shall be limited to 0.15 lb/MMBtu and CO emissions shall be limited to 0.30 lb/MMBtu. If an SNCR system is not needed, NO_x emissions shall be limited to 0.15 lb/MMBtu and CO emissions shall be limited to 0.30 lb/MMBtu by September 30 2021.

If SNCR is installed and operated to achieve the final NO_x emission limit, Robbins Lumber shall be limited to 40 ppmdv of ammonia slip emissions at 12% CO_2 based on an average of 3, 1-hour run emission tests during the operation of the SNCR. The test shall be conducted every two calendar years using EPA's Conditional Test Method for Ammonia (CTM-027).
[06-096 C.M.R. ch. 115, BACT]

e. Robbins Lumber shall submit a plan to be approved by the Department for the monitoring and record keeping of NO_x and CO readings during the first year of operation. The plan shall include the frequency and methods of NO_x and CO diagnostic testing. Nine months after the startup of Boiler #3, Robbins Lumber shall submit a progress report which contains a summary of the results of the diagnostic testing and any boiler adjustments based on the results of the diagnostic testing.

Robbins Lumber shall provide reports by February 28, 2021, conveying the results of the pre-engineering by Wechsler. By September 30, 2021, Robbins Lumber shall provide a report indicating how the NO_x and CO emission limits are being met, whether from the physical modifications or the installation and operation of SNCR controls.

H. Stack Testing

3. Robbins Lumber shall perform stack testing on Stack #3 for PM~~, PM_{10}, $PM_{2.5}$ NO_x, CO, and VOC~~ within 2 years of startup of Boiler #3, and shall perform stack testing on Stack #3 for PM_{10}, $PM_{2.5}$, NO_x, CO, and VOC by November 28, 2021 to demonstrate compliance with the emission limits, both on a lb/MMBtu basis and on a lb/hr basis, as contained in Condition (3) C. When performing this stack testing for compliance purposes, Boiler #3 shall be operated under normal operating conditions. [06-096 C.M.R. ch. 115, BACT]

5. Robbins Lumber shall conduct HCl stack testing, utilizing EPA Test Methods 26 and 26A, ~~within 2 years of initial startup~~ by November 28, 2021, for the purpose of validating the HCl emission factor used to demonstrate that HCl emissions from the boilers remain below the single HAP major source threshold of 10 TPY. [06-096 C.M.R. ch. 115, BACT]

ORDER

The Department hereby grants New Source Review Minor Revision A-156-77-4-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 NSR Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This NSR Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following shall replace Specific Condition (3) G. 2. (d) & (e) and (3) H. 3. & 5. in A-156-77-3-A (June 30, 2017):

(3) **Boiler #3**

G. Control Equipment

2. NO_x Control

d. If Robbins Lumber cannot demonstrate compliance with the NO_x limit of 0.15 lb/MMBtu without add-on controls, Robbins Lumber shall have an SNCR system installed and operational by September 30, 2021. Until the SNCR is operating and commissioned but no later than September 30, 2021, NO_x emissions shall be limited to 0.25 lb/MMBtu and CO emissions shall be limited to 0.60 lb/MMBtu. Once the SNCR is operating and commissioned, but no later than September 30, 2021, NO_x emissions shall be limited to 0.15 lb/MMBtu and CO emissions shall be limited to 0.30 lb/MMBtu. If an SNCR is not needed, NO_x emission shall be limited to 0.15 lb/MMBtu and CO emissions shall be limited to 0.30 lb/MMBtu by September 30, 2021.

If SNCR is installed and operated to achieve the final NO_x emission limit, Robbins Lumber shall be limited to 40 ppmdv of ammonia slip emissions @ 12% CO_2 based on an average of 3, 1-hour run emission tests during the operation of the SNCR. The test shall be conducted every two calendar years using EPA's Conditional Test Method for Ammonia (CTM-027).
[06-096 C.M.R. ch. 115, BACT]

e. Robbins Lumber shall submit a plan to be approved by the Department for the monitoring and record keeping of NO_x and CO readings during the first year of operation. The plan shall include the frequency and methods of NO_x and CO diagnostic testing. Nine months after the startup of Boiler #3, Robbins Lumber shall submit a progress report which contains a summary of the results of the diagnostic testing and any boiler adjustments based on the results of the diagnostic testing.

Robbins Lumber shall provide reports by February 28, 2021, conveying the results of the pre-engineering by Wechsler. By September 30, 2021, Robbins Lumber shall provide a report indicating how the NO_x and CO emission limits are being met, whether from the physical modifications or the installation and operation of SNCR controls.

H. Stack Testing

3. Within 2 years of startup of Boiler #3, Robbins Lumber shall perform stack testing on Stack #3 for PM. Robbins Lumber shall conduct stack testing on PM_{10}, $PM_{2.5}$, NO_x, CO, and VOC to demonstrate compliance with the licensed emission limits, both on a lb/MMBtu basis and on a lb/hr basis, as contained in Condition (3) C by November 28, 2021. When performing this stack testing for compliance purposes, Boiler #3 shall be operated under normal operating conditions.
[06-096 C.M.R. ch. 115, BACT]

5. Robbins Lumber shall conduct HCl stack testing, utilizing EPA Test Methods 26 and 26A, by November 28, 2021, for the purpose of validating the HCl emission factor used to demonstrate that HCl emissions from the boilers remain below the single HAP major source threshold of 10 TPY. [06-096 C.M.R. ch. 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 19th DAY OF NOVEMBER, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for
MELANIE LOYZIM, ACTING COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 9/22/2020
Date of application acceptance: 9/29/2020

Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

FILED

NOV 19, 2020

State of Maine
Board of Environmental Protection