



DEPARTMENT ORDER

**Woodland Pulp LLC  
 Washington County  
 Baileyville, Maine  
 A-215-70-P-A**

**Departmental  
 Findings of Fact and Order  
 Part 70 Air Emission License  
 Amendment #5**

**FINDINGS OF FACT**

After review of the Part 70 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**

FACILITY	Woodland Pulp LLC (Woodland Pulp)
LICENSE TYPE	Part 70 Significant License Modification
NAICS CODES	32211
NATURE OF BUSINESS	Pulp Production
FACILITY LOCATION	144 Main Street, Baileyville, Maine

Woodland Pulp LLC (Woodland Pulp) has requested a Part 70 license amendment to incorporate the terms and conditions of the New Source Review (NSR) Major Modification license A-215-77-13-A authorizing the increase of the hourly CO limits for the #3 Recovery Boiler, the corresponding increase of the annual allowable CO emissions, the addition of a one-hour maximum CO mass emission limit, and the removal the CO concentration emission limit.

**B. Emission Equipment**

The following emission unit is addressed by this Part 70 License Amendment:

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Primary Fuels</u>	<u>Stack #</u>
#3 Recovery Boiler	1,207 MMBtu/hour (original boiler plate by OEM)	6.0 MMlb dry BLS/day*	Black Liquor	02
		23,550 lb/hr	#6 Fuel Oil	
		490,000 cfh	Natural Gas	

\* Though identified in the facility's Part 70 license as 5.2 MMlb dry black liquor solids (BLS) per day, this value has been modified as informed by the results of a trial recently completed. This is for identification of the unit's maximum BLS firing capacity and is not a license limit.

### C. Application Classification

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

Part 70 Significant License Modification procedures are used for applications requesting license changes that do not qualify as Part 70 Administrative Revisions or Part 70 Minor License Modifications. The NSR license A-215-77-13-A authorized the increase in hourly CO limits from #3 Recovery Boiler from 235 pounds per hour (lb/hr) to 429 lb/hr averaged over a 24-hour block period; the addition of an hourly CO limit of 1,500 lb/hr for any one hour; the removal of the CO concentration limit (ppm); and the increase in the annual allowable CO emissions from 983 tons per year to 1,966 tons per year.

Based on changes to the licensed emission levels, the application is not considered a Part 70 Administrative Revision or a Part 70 Minor License Modification, and has therefore been processed as a Part 70 Significant License Modification under *Part 70 Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 140.

## II. PART 70 SIGNIFICANT LICENSE MODIFICATION DESCRIPTION

### A. Overview

In 2013, Woodland Pulp's Baileyville mill licensed a modification of the facility's bleach plant to identify and operate alternate bleaching process scenarios. Woodland Pulp proposed to reconfigure the bleaching system to utilize oxygen and/or oxidized white liquor, in addition to sodium hydroxide, chlorine dioxide, and hydrogen peroxide, with the intent to replace some of the chlorinated compounds historically used in the bleaching process with oxygen or oxidized white liquor and gain the ability to recycle more of the extracted lignin into the recovery process. As a result, Woodland Pulp requires a higher liquor firing rate in the recovery boiler to meet the demands of alternate bleaching scenarios such as adding to the Brown Stock stage washing cycle, which has increased the pulping liquor to be processed in the #3 Recovery Boiler. An increase in black liquor firing rate in the recovery boiler potentially results in a corresponding increase in emissions from the unit. Even with the increase in firing in the unit, the facility has proposed a balance of all other emissions at current emission levels with emissions increases of CO only.

The Woodland mill has undergone several changes since the #3 Recovery Boiler first commenced operations. Some significant changes have taken place in the last five years, including the conversion from firing #6 fuel oil to firing natural gas in the #9 Power Boiler, the #3 Recovery Boiler, and the Lime Kiln. A project

was completed in May of 2015 to enable the combustion of non-condensable gases (NCGs), stripper off-gases (SOGs), and high volume, low concentration (HVLC) NCGs in the #3 Recovery Boiler as their primary incineration point. This project allowed the facility to recapture some sulfur in the liquor cycle and to utilize the #9 Power Boiler as the back-up incineration point. The project also facilitated the removal from service of the propane-fired NCG Incinerator. The introduction of these additional gas streams to the #3 Recovery Boiler has also changed the combustion dynamics within the unit.

In the recent past, Woodland Pulp has conducted considerable research and conferred with industry recovery boiler experts seeking to improve the #3 Recovery Boiler's performance while maintaining environmental compliance. For example, the facility has undertaken the following:

- Conducted trials with different design liquor nozzles, spray angles, and pressures.
- Explored changes and evaluations of black liquor chemistry.
- Consulted with peer mills and recognized industry experts.
- Implemented mechanical and electrical control upgrades to the electrostatic precipitator (ESP) to enhance performance and reliability.
- Hosted original manufacturer and independent consultant visits to review black liquor firing practices.

Woodland Pulp requested the following in NSR license A-215-77-13-A:

- increase the licensed hourly CO limit from #3 Recovery Boiler from 235 pounds per hour (lb/hr) averaged over a 24-hour block period to 429 lb/hr averaged over a 24-hour block period;
- add an hourly CO limit of 1,500 lb/hr for any one hour;
- remove the concentration limit of 215 ppm on a dry basis, corrected to 8% oxygen, on a 30-day rolling average; and
- increase the annual allowable CO emissions from 983 tons per year to 1,966 tons per year.

Woodland Pulp did not propose to change its current alternative CO limit described in Condition (16) of A-215-70-I-R/A (issued November 18, 2011), which allows for a limit of 1,427.4 lb/hr (24-hour block period) from #3 Recovery Boiler and #9 Power Boiler combined when #9 Power Boiler is off-line. This alternative limit may be used for no more than seven (7) 24-hour blocks per year.

## B. Regulatory Requirements

### 1. Best Practical Treatment (BPT)

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 as well as for sources located in designated non-attainment areas.

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

2. New Source Performance Standards (NSPS): *Standards of Performance for Kraft Pulp Mills*, 40 C.F.R. Part 60, Subparts BB and BBa

U.S. EPA has promulgated standards of performance for specific air pollution sources in 40 Code of Federal Regulations (C.F.R.) Part 60. Subpart BB defines emission limits, testing, monitoring, recordkeeping, and reporting requirements for PM and TRS emissions for Kraft pulp mill sources, including recovery furnaces, constructed or modified after September 24, 1976. Subpart BBa defines similar requirements for Kraft pulp mill sources constructed or modified after May 23, 2013. There are no Subpart BB or Subpart BBa requirements applicable to the changes addressed in this Part 70 license amendment.

3. National Emission Standards for Hazardous Air Pollutants (NESHAP): *NESHAP for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*, 40 C.F.R. Part 63, Subpart MM

Subpart MM applies to recovery furnaces, smelt dissolving tanks, and lime kilns and generally regulates particulate matter emissions as a surrogate for hazardous air pollutants (HAPs). Woodland Pulp's chemical recovery combustion units are already subject to Subpart MM requirements and will not be modified as a result of the project such that any new Subpart MM requirements would apply. There are no Subpart MM requirements applicable to the changes addressed in this Part 70 license amendment.

4. NESHAP: *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Boiler MACT)*, 40 C.F.R. Part 63, Subpart DDDDD

The #3 Recovery Boiler is not subject to this NESHAP Subpart, because units covered by 40 C.F.R. Part 63, Subpart MM are not subject to Boiler MACT standards. [40 C.F.R. Part 63, § 63.7491(f)]

5. Best Available Control Technology (BACT)

Per 06-096 C.M.R. ch. 100, “modification or modified source” means any physical change in or change in the method of operation of a source that would result in an emissions increase of any regulated pollutant. The #3 Recovery Boiler was not physically modified as part of the change addressed in the NSR license; however, because the CO emission limit from a previous BACT determination was changed, an updated BACT analysis for CO emissions from the #3 Recovery Boiler was presented in NSR license A-215-77-13-A.

The Department’s conclusion of BACT for this project is as follows: The Department finds that good combustion practices, as currently required, constitutes BACT for CO emissions from the #3 Recovery Boiler. This unit shall meet a CO limit of 429 lb/hour on a 24-hour block average basis, with no one hour to exceed 1,500 lb/hour.

Woodland Pulp shall continue to use the CO continuous emission monitoring system (CEMS), operated in accordance with *Source Surveillance – Emissions Monitoring*, 06-096 C.M.R. ch. 117, to demonstrate compliance with the one-hour and 24-hour block average CO emission limits.

**C. Facility Annual Emissions**

Woodland Pulp shall be restricted to the following annual emissions, based on a 12-month rolling total.

**Total Licensed Annual Emissions for the Facility <sup>a</sup>**  
**Tons/year**  
 (used to calculate the annual license fee <sup>b</sup>)

	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>	<b>TRS</b>
Tissue Machines	--	--	0.6	39.6	43.6	--	--
Tissue Machines and #9 Power Boiler Combined	213.6	213.6	--	--	--	59.5	--
No. 9 Power Boiler	--	--	676	780	5,008	--	--
#3 Recovery Boiler	189	189	1,567	601	1,966	176	--
Smelt Dissolving Tank	50	50	--	--	--	--	13.6
Lime Kiln	87	87	35	175	1,750	--	--
Package Boiler	56	56	9.9	5.6	1.4	0.1	--
NCG Incinerator	8.4	8.4	12.7	39.6	2.8	0.2	--
<b>TOTALS</b>	<b>604.0</b>	<b>604.0</b>	<b>2,301.2</b>	<b>1,178.0 <sup>c</sup></b>	<b>8,771.8</b>	<b>235.8</b>	<b>13.6</b>

- a Emissions limits in the table do not include insignificant activities and process units (e.g. the woodyard) with no licensed emission limits, and do not include emergency engines whose possible emissions provide little or no noticeable contribution to the totals represented in this table.
- b PM<sub>10</sub>, CO, and TRS are not used in the calculation of the annual fee but are included in this table for completeness.
- c Note that the total NO<sub>x</sub> limit for the mill is less than total allowable emissions from individual units. Woodland Pulp may emit up to each required limit for any one individual unit, provided that the total of all units does not exceed the mill wide total of 1,178.0 ton/year on a 12-month rolling total basis. See License A-215-70-I-R/A, Condition (17), issued November 18, 2011.

### III. AMBIENT AIR QUALITY ANALYSIS

A refined modeling analysis was performed to show that emissions from Woodland Pulp, in conjunction with other sources, will not cause or contribute to violations of National Ambient Air Quality Standards (NAAQS) for CO. (See NSR license A-215-77-13-A, issued concurrently with this Part 70 License Amendment.)

### ORDER

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

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

The Department hereby grants the Part 70 License Amendment A-215-70-P-A pursuant to 06-096 C.M.R. 140 and the preconstruction permitting requirements of *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 and subject to the conditions found in Air Emission License A-215-70-I-R/A (11/18/2011), in the following amendments:

- A-215-70-K-A (4/23/2012);
- A-215-70-L-A (9/17/2014);
- A-215-70-M-A (11/4/2014); and
- A-215-70-N-A (12/29/2015);

and the following conditions.

Federally enforceable conditions in this Part 70 license amendment must be changed pursuant to the applicable requirements in 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only.**

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**

The following shall replace condition (15)A in Air Emission License Amendment A-215-70-K-A (4/23/2012):

(15) #3 Recovery Boiler

A. Emissions shall not exceed the following:

Pollutant	gr/dscf @ 8% O <sub>2</sub>	ppmv (dry) @ 8% O <sub>2</sub>	Emission Rate, lb/hr	Origin and Authority
PM	0.021	-	40.68	A-215-71-B-A/R, BPT
PM <sub>10</sub>	-	-	40.68	
SO <sub>2</sub>	-	150 (30-day rolling avg)	373.04 (3-hour block average) <sup>1</sup>	
NO <sub>x</sub>	-	80 (30-day rolling avg) <sup>2</sup> 164 (24-hr block avg) <sup>2</sup>	143.3 (24-hour block average) <sup>3</sup>	
CO	-	-	429 (24-hr block average) <sup>3</sup> , with no one hour to exceed 1,500 lb/hour	A-215-77-13-A, BACT
VOC	-	-	40.2 (based on appropriate EPA stack testing method)	06-096 C.M.R. 140, BPT (Enforceable by State only)
TRS	-	5 (12-hr block average) <sup>4</sup>	-	A-215-71-B-A/R, BPT

- 1 See Condition 15(F)(1) of Air Emission License A-215-70-I-R/A (11/18/2011) for an alternative to this limit.
- 2 See Condition 14(J) of Air Emission License A-215-70-I-R/A (11/18/2011) regarding compliance and for alternatives to these limits by averaging emissions with the #9 Power Boiler.
- 3 See Condition 16 of Air Emission License A-215-70-I-R/A (11/18/2011) for alternatives to these limits by averaging emissions with the #9 Power Boiler.
- 4 The first 2 (two) 12 (twelve)-hour block averages in a calendar quarter which exceed 5 ppm are not considered violations of 06-096 C.M.R. ch. 124 or this License.

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In addition to the monitoring and recordkeeping requirements specified in the facility's Part 70 license and subsequent amendments, Woodland Pulp shall continue to use data from the CO continuous emission monitoring system (CEMS), operated in accordance with 06-096 C.M.R. ch. 117, to demonstrate compliance with the above specified CO emission limits.

DONE AND DATED IN AUGUSTA, MAINE THIS 29 DAY OF September, 2017.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Mark Allen Robert Cone for  
PAUL MERCER, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-215-70-I-R/A.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/24/2017

Date of application acceptance: 2/28/2017

Date filed with the Board of Environmental Protection:

This Order prepared by Jane E. Gilbert, Bureau of Air Quality.

