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

DEPARTMENT ORDER

Louisiana-Pacific Corporation **Aroostook County** **New Limerick, Maine** **A-327-77-5-A**	**Departmental** **Findings of Fact and Order** **New Source Review** **NSR #5**

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	Louisiana-Pacific Corporation
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	321219
NATURE OF BUSINESS	Reconstituted Wood Product Manufacturing
FACILITY LOCATION	240 Station Road, New Limerick, Maine

B. NSR License Description

Louisiana-Pacific Corporation (LP) has requested a New Source Review (NSR) license to implement physical and operational changes to accommodate the manufacturing of a new specialty engineered wood product. This project, referred to as the 2021 Expansion Project, includes the following changes to the facility:

1. Operational changes to the Blending process;
2. Physical modifications to Line 1 Press (previously referred to as the OSB Press);
3. Physical modifications to the facility's Pneumatic Systems;
4. Installation of new finishing operations; and
5. Installation of a new hammermill.

C. Emission Equipment

The following new equipment is addressed in this NSR license:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (gal/hr)	Fuel Type, % sulfur	Manf. Date
Finishing Line Oven #1	5.0	54.6	Propane, negligible	2021
Finishing Line Oven #2	5.0	54.6	Propane, negligible	2021
Finishing Line Oven #3	5.0	54.6	Propane, negligible	2021
Finishing Line Oven #4	6.35	69.4	Propane, negligible	2021
Finishing Line Oven #5	6.35	69.4	Propane, negligible	2021
Finishing Line Oven #6	6.35	69.4	Propane, negligible	2021
Specialty Pre-Heat Oven #1	3.15	34.4	Propane, negligible	2021
Specialty Drying Oven #1	3.15	34.4	Propane, negligible	2021
Specialty Drying Oven #2	3.15	34.4	Propane, negligible	2021

Process Equipment

Equipment	Description	Pollution Control Equipment
Primer Finish Line	Surface treatments for finished product using fan coaters	None
	Surface treatments for finished product using curtain coater	None
	Surface treatments for finished product using high-pressure spray guns	Enclosed booths with filters
Specialty Finish Coating Line	Surface treatments for finished product using fan coaters	None
	Surface treatments for finished product using high-pressure spray guns	Enclosed booths with filters
Misc. Product Finishing Line	Surface treatments for finished product using high-pressure spray guns	Enclosed booths with filters

The following existing equipment is modified by this project:

Process Equipment

Equipment	Description	Pollution Control Equipment
Line 1 Press*	Uses heat from thermal oil and pressure to bind wafers together	RCO/RTO
Pneumatic Systems	Transfers material around the facility	Baghouses

*Formerly referred to as OSB Press

Fuel Burning Equipment

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Fuel Type	Manuf. Date	Install. Date
Press RCO/RTO*	11.2	Propane/Natural Gas	1999	1999

*Combined regenerative catalytic oxidizer (RCO) and regenerative thermal oxidizer (RTO)

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

Fuel Burning Equipment

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Fuel Type	Manuf. Date	Install. Date
Central Heating Unit (CHU)	278	Bark, wood, mill trimmings	2007	2008
Dryer RTO	13.5	Propane/Natural Gas	2007	2007

Process Equipment

Equipment	Description	Pollution Control Equipment
Main Line Spray Booth*	Surface treatments for finished product using high-pressure spray guns	Enclosed booths with filters

*Formerly referred to as OSB Spray Booth

D. Definitions

Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue; wood products (*e.g.,* trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (*e.g.,* almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. 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. LP should consult with the Department before adding any new biomass type to its fuel mix.

E. Project Description

The 2021 Expansion Project involves process and equipment changes that will enable the production line that currently produces oriented strand board (OSB) to produce both OSB as well as a new specialty engineered wood panel product (referred to throughout this document as specialty paneling). Independent of the 2021 Expansion Project, laminated strand lumber (LSL) produced on the facility's LSL Press will continue to be finished by the existing LSL Edge Seal Process.

Due to the change in products to be produced, this license refers to the former OSB production line as the "Main Line." The Main Line consists of an existing press and spray booth. The OSB Press will be renamed Line 1 Press, and the OSB Spray Booth will be renamed Main Line Spray Booth.

In the blending process, the use of phenol-formaldehyde resin and wax will be used when producing OSB, and MDI (methylene di-phenyl-di-isocyanate) resin and wax will be used when producing the specialty paneling. Usage of zinc borate will increase. A small turbo blender will be added to mix MDI with wood fines.

Line 1 Press will be physically modified. In addition to regular maintenance activities, the press' hydraulic system will be upgraded, and a paper overlay system will be added. These changes are to allow Line 1 Press to be operated to produce either OSB or specialty paneling.

Physical modifications and upgrades will be made to the pneumatic systems that collect and transport fines, sawdust, and dust throughout the facility. A new hammermill and ancillary equipment will be added to the new building addition planned for the south side of the facility. The hammermill will be used to grind/shred dry wood and convey fines via the existing pneumatic system.

New finishing lines will be added consisting of saws, profilers, coating and adhesive application, drying ovens, one down grade board hog, strapping machines, and packaging equipment. This equipment will be housed in the existing building and a new building located on the east end of the facility. In addition to the existing Main Line Spray Booth, there will be three new lines: Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line.

The Main Line Spray Booth will be used to apply edge seal to OSB or primer to the ends of the specialty paneling. No other coating will be applied to OSB products. For the specialty paneling, the Primer Finish Line will contain high-pressure spray booths, fan coaters, and curtain coaters. It will consist of three lanes in parallel. Each of the three lanes has two ovens in series, Finishing Line Ovens #1 - #3 followed by Finishing Line Ovens #4 - #6. All of the specialty paneling will be primed and dried using this process. The full priming process will only be used for specialty paneling.

After it is primed, a portion of the specialty paneling will also be coated on the Specialty Finish Coating Line. The Specialty Finish Coating Line will consist of one lane with three ovens in series: Specialty Pre-Heat Oven #1 and Specialty Drying Ovens #1 and #2. Specialty paneling will be coated using fan coaters and high-pressure spray booths and then dried in the ovens.

The Miscellaneous Product Finishing Line will consist of several manual stations where coatings, adhesive, and caulk can be applied. There are no drying ovens associated with this line.

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 LP does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements. However, this application does seek to modify a Best Available Control Technology (BACT) analysis performed pursuant to New Source Review.

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. LP has proposed using 1/2017 – 12/2018 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 matter as the filterable portions of the PM_{10} emissions.

b. Emissions of PM_{10} and $PM_{2.5}$ in the annual emissions report are for the filterable portion only. Emissions of PM_{10} and $PM_{2.5}$ were adjusted to include emissions of condensable particulate matter (CPM).

BAE for new equipment are considered to be zero for all pollutants.

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

Baseline Actual Emissions (1/2017 – 12/2018 Average)

Equipment	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
CHU-Dryers & Dryer RTO	1.47	1.47	1.47	–	12.39	70.40	1.98
CHU-TOS	7.21	9.58	9.58	10.06	46.27	11.48	0.08
Line 1 Press	1.27	2.05	2.05	0.01	1.16	5.24	1.05
Press RCO/RTO	0.08	0.08	0.08	0.01	4.63	0.68	0.09
Main Line Spray Booth	–	–	–	–	–	–	0.09
Pneumatic Systems	0.04	0.04	0.04	–	–	–	3.90
Total	**10.07**	**13.22**	**13.22**	**10.08**	**64.45**	**87.80**	**7.19**

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 such as the changes in use of other facility equipment or changes in steam demand.

a. CHU-Dryer and Dryer RTO

The CHU and Dryer RTO are considered affected units because there is the potential for the project to result in increased usage of this equipment.

PAE from this equipment was based on a projected wafer throughput of 186,150 oven-dried tons (OTD) per year and CHU fuel usage of 124,392 tons of wood per year.

Emissions of PM, NO_x, CO, and VOC from the CHU-Dryer stack were based on previous stack tests. PM_{10} (filterable) and $PM_{2.5}$ (filterable) emissions were assumed to be the same as PM. The CPM from the CHU is accounted for in the CHU-TOS emissions.

Emissions of SO_2 from wood combustion in the CHU are accounted for in the CHU-TOS emissions. Additional SO_2 emissions from the propane combustion in the RTO are accounted for in this unit and are based on the emission factor provided in AP-42, Table 1.5-1 (7/2008).

b. CHU-TOS

The CHU is considered an affected unit because there is the potential for the project to result in increased usage of this equipment. PAE is based on a projected fuel usage of 124,392 tons of wood per year.

For the CHU-TOS, emissions of NO_x and CO were based on emission factors developed from continuous emissions monitoring system (CEMS) data. PM and VOC emissions were based on previous stack tests.

PM_{10} and $PM_{2.5}$ emissions were assumed to be the same as PM and then adjusted to include CPM using an emission factor of 5.86×10^{-3} lb/MMBtu from NCASI Technical Bulletin 1020 (12/2013).

Emissions of SO_2 were based on AP-42, Table 1.6-2 (9/2003).

c. Line 1 Press and Press RCO/RTO

Line 1 Press is considered a physically modified unit. PAE is based on a projected throughput of 161,111 tons of finished product per year.

Emissions of PM, PM_{10}, $PM_{2.5}$, NO_x, CO, and VOC are based on previous stack testing conducted in September 2020 at another LP facility that manufactures a similar type of product.

SO_2 emissions from propane combustion in the RCO/RTO are based on the emission factor provided in AP-42, Table 1.5-1 (7/2008).

d. Pneumatic Systems

The facility's pneumatic systems are considered physically modified. PAE is based on a projected maximum facility throughput of 250 million square feet (3/8" basis).

Emissions of PM, PM_{10}, and $PM_{2.5}$ were determined by calculating the uncontrolled emissions based on the tons of product collected by each system unit. Particle size distribution was based on factors derived based on emissions estimation spreadsheets for woodworking from North Carolina's Department of Environmental Quality. Emissions after control were then determined by applying a control efficiency of 99.99% for PM, 99.5% for PM_{10}, and 99.0% for $PM_{2.5}$.

Emissions of VOC are based on an emission factor from NCASI's Wood Product Database 2013 Update.

e. New Emission Units

New emission units or processes must use potential to emit (PTE) emissions for PAE. Emissions from Finishing Line Ovens #1-#6, Specialty Pre-Heat Oven #1, and Specialty Drying Ovens #1 & #2 are based on a combination of emission factors from AP-42 and manufacturer specifications for low NO_x burners.

LP has proposed a combined VOC limit for finishing lines, excluding the Finishing Line Ovens, (i.e., the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line) of 34.9 tpy.

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)
CHU-Dryers & Dryer RTO	2.42	2.42	2.42	0.04	20.48	116.34	3.26
CHU-TOS	1.14	4.32	4.32	13.53	64.50	21.14	0.09
Line 1 Press & Press RCO/RTO	1.38	3.31	3.31	0.03	3.45	7.32	4.00
Pneumatic Systems	4.98	7.61	5.68	–	–	–	2.38
Finishing Line Ovens #1-3	0.50	0.50	0.50	0.04	3.29	5.39	0.72
Finishing Line Ovens #4-6	0.64	0.64	0.64	0.05	4.17	6.84	0.91
Specialty Pre-Heat Oven #1	0.11	0.11	0.11	0.01	0.69	1.13	0.15
Specialty Drying Ovens #1 & #2	0.21	0.21	0.21	0.02	1.38	2.26	0.30
Primer Finish Line & Main Line Spray Booth	0.17	0.17	0.17	–	–	–	–
Specialty Finish Coating Line	3.26	3.26	3.26	–	–	–	–
Misc. Product Finishing Line	0.86	0.86	0.86	–	–	–	–
Combined VOC Limit for Finishing Lines	–	–	–	–	–	–	34.91
Total	**15.67**	**23.41**	**21.48**	**13.72**	**97.96**	**160.42**	**46.72**

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 1/2017 – 12/2018 (ton/year)	Projected Actual Emissions (ton/year)	Emissions Increase (ton/year)	Significant Emissions Increase Levels (ton/year)
PM	10.07	15.67	5.60	25
PM_{10}	13.22	23.41	10.19	15
$PM_{2.5}$	13.22	21.48	8.26	10
SO_2	10.08	13.72	3.64	40
NO_x	64.45	97.96	33.51	40
CO	87.80	160.42	72.62	100
VOC	7.19	46.72	39.53	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. 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 associated with the 2021 Expansion Project.

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 as well as for those 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.

B. Operational Changes to the Blending Process

With implementation of the 2021 Expansion Project, use of phenol-formaldehyde resin and wax will be discontinued, and only MDI (methylene di-phenyl-di-isocyanate) resin will be used. Usage of zinc borate will increase, and a small turbo blender will be added to mix MDI with wood fines.

This is a closed mechanical process with no emissions of regulated air pollutants. Therefore, this equipment is not considered an emission unit and is not subject to BACT. It is mentioned here for completeness and informational purposes only.

C. Line 1 Press

Line 1 Press (formerly referred to as the OSB Press) will be physically modified as part of the 2021 Expansion Project. It will be converted to allow production of either OSB or a variety of specialty engineered wood products. The press' hydraulic system will be upgraded and a paper overlay system will be added.

1. BACT Findings

LP submitted a BACT analysis for control of emissions from Line 1 Press.

a. Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)

(1) Control Options

The primary pollutant of concern from Line 1 Press are VOC (many of which are HAP) which is emitted when the heat and pressure in the press activates the resin which bonds the product together. Potential control technologies include add-on pollution control equipment such as adsorption systems, absorption systems, biofiltration, condensation systems, and thermal or catalytic oxidation.

Adsorption Systems
Adsorption is the process by which molecules collect on and adhere to the surface of an adsorbent solid due to physical and/or chemical forces. Activated carbon is typically used as an adsorbent because of its large surface area which is a critical factor in the adsorption process although other materials, such as zeolite and polymers, may also be used.

Adsorption media, such as activated carbon or zeolite, are hydrophobic which is problematic for controlling VOC from wood products applications. The moisture in the exhaust competes for active adsorptive sites in the media and decreases the VOC control efficiency. Dehumidification can help this problem but is impractical at high flow rates. Additionally, the terpenes from wood present in the exhaust will tend to condense and foul the media, reducing efficiency and increasing needed maintenance. Therefore, an adsorption system is determined to not be technically feasible for control of VOC from Line 1 Press.

Absorption Systems
In absorption systems, constituents of a gas stream are selectively removed by a liquid solvent. The control of gas-phase VOC using an absorption scrubber system relies on contact between the gas stream and a liquid in which the contaminants are soluble or with which it will chemically react. The degree of control depends upon the solubility of the gas, gas/liquid throughput rates, contact time, and the mechanism of the scrubber. Gas absorption is commonly used to recover product or to purify gas streams with high concentrations of water-soluble compounds. They are most effective for gas streams with pollutant concentrations between 250 and 10,000 ppmv. Low concentrations of organics in an exhaust stream require long contact times and large quantities of absorbent for effective removal.

VOC emissions from Line 1 Press include methanol and formaldehyde which are water soluble. However, since the press exhaust has expected VOC concentrations below 100 ppmv, the use of an absorption system is determined to not be technically feasible for control of VOC from Line 1 Press.

Biofiltration Systems

In a biofilter, the exhaust gas stream is humidified, then passed through a distribution system beneath a bed of compost, bark mulch, or soil. The media in the bed contains an active population of bacteria and other microbes. As the air stream flows upward through the media, pollutants are adsorbed into the media and converted by microbial metabolism to form carbon dioxide and water. Biofilters work best at steady state conditions and cannot tolerate extended periods of downtime. They also typically require a very large footprint. Additionally, the microbes in the bioreactor are sensitive to temperature swings, loading levels, and changes in available moisture. Biofilters are listed in EPA's RACT/BACT/LAER Clearinghouse (RBLC) database as a control technology that has been utilized on similar systems and is therefore considered technically feasible for this unit.

Condensation Systems

Condensation systems utilize a refrigeration source to cool the exhaust stream to covert the VOC from a gaseous phase to a liquid phase. They are most often used for high concentration exhaust streams. Recovery efficiencies greater than 95% can be achieved for exhaust streams with concentrations of 5,000 – 10,000 ppmv or greater. Recovery efficiencies are significantly less for exhaust streams with lower concentrations.

Since the press exhaust has expected VOC concentrations below 100 ppmv, the use of a condensation system is determined to not be technically feasible for control of VOC from Line 1 Press.

Oxidation Systems

A thermal oxidizer raises the temperature of the exhaust stream to oxidize (burn) or pyrolyze (thermally break down) the constituents. In the case of VOC, complete combustion produces carbon dioxide and water. Regenerative thermal oxidizers (RTOs) use heat exchangers to preheat the exhaust and/or recover waste heat from the treated air stream. Regenerative catalytic oxidizers (RCOs) operate in a similar manner except that they contain a catalyst that allows the oxidation to take place at significantly lower temperatures.

Thermal and catalytic oxidation systems are technically feasible forms of VOC control for Line 1 Press as well as a listed compliance option for *National Emission Standards of Hazardous Air Pollutants: Plywood and Composite Wood Products*, 40 C.F.R. Part 63, Subpart DDDD. Thermal and catalytic

oxidation systems are also listed as control devices for similar equipment in the RBLC database. Therefore, a thermal and/or catalytic oxidation system is considered technically feasible for this unit.

(2) Ranking of Control Technologies

Thermal and catalytic oxidation systems and biofiltration were determined to be technically feasible control technologies for VOC from Line 1 Press. Biofiltration systems can achieve control efficiencies of 50 – 90%, while oxidation systems provide a control efficiency of 90% or greater.

LP currently uses a combined RCO/RTO to control VOC emissions from the press. Therefore, Line 1 Press already has the most effective control for VOC.

(3) Determination

The Department finds the use of the existing RCO/RTO and the previously established emission limit of 1.75 lb/hr (as carbon) to represent BACT for VOC emissions from Line 1 Press.

This standard applies at all times. LP shall demonstrate compliance with the VOC lb/hr limit while operating as an RCO through emissions testing conducted every other calendar year. To allow time for project construction, the next compliance test is due no later than 12/31/2022.

The RCO/RTO is primarily operated as an RCO. LP shall demonstrate compliance with the VOC lb/hr limit while operating as an RTO through emissions testing upon request of the Department.

b. Particulate Matter (PM, PM_{10}, and $PM_{2.5}$)

(1) Control Options

A significant portion of the particulate matter emitted from Line 1 Press is in the form of condensable particulate matter (CPM). CPM are gases at elevated temperatures but condense to form small droplets at ambient temperatures. Potential control technologies include baghouses, electrostatic precipitators (ESP), wet scrubbers, cyclones, and oxidation systems.

<u>Baghouses</u>
Baghouses, sometimes referred to as fabric filter systems, consist of a number of fabric bags placed in parallel that collect particulate matter on the surface of the filter bags as the exhaust stream passes through the fabric membrane. The collected particulate is periodically dislodged from the bags' surface to

collection hoppers via short blasts of high-pressure air, physical agitation of the bags, or by reversing the gas flow.

Due to the high moisture loading of the exhaust and ventilation streams, baghouses would be blinded and not effective in this application. Therefore, use of a baghouse is determined to not be technically feasible for control of particulate matter from Line 1 Press.

ESPs/WESPs

ESPs work by charging particles in the exhaust stream with a high voltage, oppositely charging a collection surface where the particles accumulate, removing the collected dust by a rapping process, and collecting the dust in hoppers. In wet ESPs (WESPs), the collectors are either intermittently or continuously washed by a spray of liquid, usually water. Instead of collection hoppers, a drainage system is used.

Dry ESPs are not recommended for removal of particulate matter in moist exhaust streams nor in ones containing flammable materials (e.g., VOC). Therefore, use of a dry ESP is determined to not be technically feasible for control of particulate matter from Line 1 Press.

The use of a WESP is considered technically feasible for this unit.

Wet Scrubbers

Wet scrubbers remove particulate matter from the gas stream by capturing the particles in droplets of water. A liquid stream removes the particles through impacting them with water droplets either through water spraying into the exhaust or through violent mixing of water with the exhaust stream. The liquid containing the pollutants is then collected for disposal or treatment. Wet scrubbers are most effective for exhaust streams that consist of the following:

- Hygroscopic material (i.e., readily absorbs water);
- Combustible, corrosive, and explosive material;
- Particulates that are difficult to remove in their dry form;
- Particulates in the presence of soluble gases; and
- Particulates in waste gas streams with high moisture content.

There are several types of wet scrubbers available. Venturi scrubbers use a “converging-diverging” flow channel. The converging section causes the exhaust stream velocity and turbulence to increase. The scrubbing liquid is added prior to the gas reaching the diverging section, improving gas-liquid contact.

Dynamic scrubbers pass the exhaust stream through a chamber (tower) where it is sprayed with water. A power-driven rotor is used to shear water into finely dispersed droplets, improving the gas-liquid contact.

Both venturi and dynamic scrubbers are considered technically feasible for this unit.

Cyclones

Cyclone collectors consist of one or more conically shaped vessels in which the gas stream follows a circular motion prior to outlet. The exhaust gas enters a cylindrical chamber on a tangential path and is forced along the outside wall of the chamber at a high velocity, causing the PM to impact collectors on the outer wall of the unit and fall into a hopper for collection. A group of cyclones that operate in parallel are referred to as multiclones.

Cyclones are typically operated to remove larger sized particles and do not provide high levels of removal for fine particles or CPM. They are also not a previously proven control method for similar presses. The press exhaust stream has a high moisture content that may result in plugging of the cyclone hopper. Therefore, use of a cyclones/multiclone is determined to not be technically feasible for control of particulate matter from Line 1 Press.

Oxidation Systems

Although primarily used for VOC control, oxidation systems as previously described can also remove organic particulate matter from exhaust streams. They are a previously demonstrated control method for similar presses. Therefore, an oxidation system is considered technically feasible for this unit.

(2) Ranking of Control Technologies

Thermal and catalytic oxidation systems, WESPs, and wet scrubbers were determined to be technically feasible control technologies for particulate matter from Line 1 Press. WESPs have a high control efficiency (90-99%) for filterable particulate matter but a relatively low control efficiency (50%) for CPM. Wet scrubbers and oxidation systems both have a similar range of control efficiency (70-90%) for filterable particulate matter and comparable control efficiencies (50-95%) and (70-90%) for CPM.

LP currently uses a combined RCO/RTO to control VOC emissions from the press. Therefore, Line 1 Press already has one of the most effective control for particulate matter.

(3) Determination

The Department finds the use of the existing RCO/RTO and the following previously established emission limits to represent BACT for particulate matter emissions (PM, PM_{10}, and $PM_{2.5}$) from Line 1 Press.

Operating as…	PM (gr/dscf)	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)
RCO	0.015	12.30	12.30	12.30
RTO	0.015	12.30	12.30	12.30

These standards apply at all times. LP shall demonstrate compliance with the particulate matter gr/dscf and lb/hr limits while operating as an RCO through emissions testing conducted every other calendar year. To allow time for project construction, the next compliance test is due no later than 12/31/2022.

Since the RCO/RTO is primarily operated as an RCO, LP shall demonstrate compliance with the particulate matter gr/dscf and lb/hr limits while operating as an RTO through emissions testing upon request of the Department.

Visible emissions from the RCO/RTO stack (Stack #3) shall not exceed 20% opacity on a six-minute block average basis except for periods of startup, shutdown, malfunction, or approved maintenance.

Approved maintenance includes a bake-out process (as described in LP's Part 70 license). During the bake-out process, visible emissions from Stack #3 shall not exceed 30% opacity on a 6-minute block average basis except for 30 minutes during which time visible emissions shall not exceed 70% opacity. Each bake-out process shall not exceed 2 hours. [06-096 C.M.R. ch. 101, § 4(C)]

Compliance shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

c. Sulfur Dioxide (SO_2)

The RCO/RTO associated with Line 1 Press burns fuel in order to combust exhaust gases from the press. The RCO/RTO fires propane and is also licensed to fire natural gas. Both are inherently low-sulfur fuels and result in minimal emissions of SO_2. Additional add-on pollution controls are not economically feasible.

The Department finds the use of propane or natural gas in the RCO/RTO and the previously established emission limit of 1.50 lb/hr to represent BACT for SO_2 emissions from Line 1 Press.

This standard applies at all times. LP shall demonstrate compliance with the SO_2 lb/hr limit through emissions testing upon request of the Department.

d. Nitrogen Oxides (NO_x) and Carbon Monoxide (CO)

The RCO/RTO associated with Line 1 Press burns fuel in order to combust exhaust gases from the press. The unit contains two separate burners which fire propane or natural gas. When operated as an RTO, the maximum heat input for both burners combined is 11.2 MMBtu/hr. However, the RCO/RTO is primarily operated as an RCO firing propane. The presence of the catalyst allows for a lower heat input. Thus, when operated as an RCO, the firing rate of the burners is reduced by inserting an orifice into the gas inlet line to physically limit the firing rate to 7.0 MMBtu/hr (both burners combined).

The use of additional pollution controls for NO_x and CO for propane/natural gas-fired burners of this size is not economically feasible.

The Department finds the use of propane or natural gas in the RCO/RTO and the following previously established emission limits to represent BACT for NO_x and CO emissions from Line 1 Press.

Operating as…	NO_x (lb/hr)	CO (lb/hr)
RCO	19.90	9.50
RTO	20.50	9.60

These standards apply at all times. LP shall demonstrate compliance with the NO_x lb/hr limit while operating as an RCO through emissions testing conducted every five calendar years. The next compliance test is due no later than 12/31/2025.

LP shall demonstrate compliance with the CO lb/hr limits and the NO_x lb/hr limits while operating as an RTO through emissions testing upon request of the Department.

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

LP is subject to *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* 40 C.F.R. Part 63, Subpart DDDD. Line 1 Press is

considered a "reconstituted wood product press" which is part of the affected source per § 63.2232(b). Requirements of Subpart DDDD are addressed in the facility's Part 70 license. This NSR license does not change the applicability or requirements of any emissions unit.

3. Production Limit

LP was previously subject to a production limit from this press of 600 tons of finished product per day on a 7-day rolling average basis. [A-327-70-H-A, 6/30/2006] With this licensing action, LP is modifying and relicensing Line 1 Press. The PAE demonstrates actual emissions are not expected to exceed major modification levels. Therefore, this limitation will be considered obsolete upon startup of the Line 1 Press to produce specialty paneling.

4. Periodic Monitoring

The following periodic monitors are required for the Line 1 Press as part of this NSR licensing action. (Additional periodic monitors may be required for reasons other than NSR and are addressed in LP's Part 70 license.)

a. Date, time, and duration of each bake-out process including start/end times of the warm-up cycle;
b. Records of Method 9 observations conducted during each bake-out process including date, time, and results; and
c. Records of any maintenance activities performed (planned or unplanned) on the Press RCO/RTO.

D. Finishing Lines

This section addresses emissions of particulate matter, VOC, and HAP from the coating operations on proposed finishing lines. Emission requirements for the ovens associated with the finishing lines are addressed later in this document.

The Main Line Spray Booth uses a high-pressure spray booth to apply edge seal to OSB or primer to the ends of the specialty paneling.

The Primer Finish Line process will use three different methods of primer application. There will be 12 fan coating application stations, six curtain coater application stations, and five high-pressure spray coating booths.

The Specialty Finish Coating Line will use one fan coating application station and several high-pressure spray coating booths.

The Miscellaneous Product Finishing Line will have several manual stations, including manual spray booths, where coatings, adhesives, and caulk can be applied.

1. BACT Findings

   a. Particulate Matter (PM, PM_{10}, and $PM_{2.5}$)

      The fan coating and curtain coating processes us a metal fan or metal box to transfer primer from a liquid bath to the product being coated. These coating types do not generate emissions of particulate matter.

      Primer and paint will also be applied using either automatic or manual paint booths. The paint booths will all be enclosed and equipped with particulate filters. This is considered a highly effective control method for particulate matter from spray painting operations.

      The Department finds the use of particulate filters and the visible emission limit listed below to represent BACT for particulate matter emissions (PM, PM_{10}, and $PM_{2.5}$) from the facility's finishing lines.

      Visible emissions from any finishing line spray booth which vents outside shall not exceed 10% opacity on a 6-minute block average basis. LP shall demonstrate compliance with the visible emission limit through performance testing upon request of the Department.

      LP shall keep records of the dates the particulate filters are replaced on each spray booth.

   b. Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)

      Emissions of VOC and HAP from the finishing lines is directly proportional to the VOC/HAP content of the products applied. The finishing lines are subject to State and Federal regulations limiting the amount of VOC and HAP in the coatings, adhesives, and caulk used.

      Surface Coating Facilities, 06-096 C.M.R. ch. 129, contains applicable limits for the VOC content of the coatings applied along with work practice standards for the minimization of VOC emissions.

      National Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products, 40 C.F.R. Part 63, Subpart QQQQ, contains applicable limits on the organic HAP in the products used.

      Both of these regulations are described in greater detail later in this license.

All of the products that will be used are considered to have a low VOC/HAP content. Additionally, LP has proposed a combined annual VOC limit for the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line of 34.9 tpy on a 12-month rolling total basis.

The Department finds an annual VOC limit of 34.9 tpy on a 12-month rolling total basis for the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line combined and compliance with the most current versions of 06-096 C.M.R. ch. 129 and 40 C.F.R. Part 63, Subpart QQQQ to represent BACT for VOC and HAP emissions for the finishing lines.

2. Periodic Monitoring

The following periodic monitors are required for the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line as part of this NSR licensing action. (Additional periodic monitors may be required for reasons other than NSR and are addressed in LP's Part 70 license.)

a. Dates the particulate filters are replaced on each spray booth; and
b. Monthly calculations of VOC use for the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line.

3. *Surface Coating Facilities*, 06-096 C.M.R. ch. 129

LP will be subject to *Surface Coating Facilities*, 06-096 C.M.R. ch. 129 under the category of "surface coating of flatwood paneling." The definition of "flatwood paneling coating line" includes coating lines which apply and dry or cure coatings to exterior siding.

This regulation is an applicable requirement that will be addressed in the facility's Part 70 license. Although not part of the New Source Review process, the requirements of this regulation are presented below for clarity and informational purposes, since LP will be subject to them upon startup of the new finishing lines regardless of when this license is incorporated into the Part 70 license.

a. Emission Limitations

Actual VOC emissions from the finishing lines are expected to exceed 2.7 tpy. As such, the emission limitations in Section 4 are applicable. LP has elected to comply with Control Option 1, use of low-solvent content coatings.

LP is limited to using coatings with a VOC content equal to or less than 2.1 lb VOC per gallon of coating (excluding water and exempt compounds), as applied and

2.9 lb VOC per gallon of solids, as applied. [06-096 C.M.R. ch. 129, § 4(E)] "Exempt compounds" are those specifically defined as not being a VOC per the definition of VOC in 06-096 C.M.R. ch. 100.

b. Handling, Storage, and Disposal of Materials Containing VOC

LP is subject to the work practice standards contained in Section 5 of 06-096 C.M.R. ch. 129. These requirements include:

(1) Vapor-tight containers shall be used for the storage of spent or fresh VOC and for the storage or disposal of cloth or paper impregnated with VOC that are used for surface preparation, clean up, or coating removal.

(2) Cleanup Operations

(i) The use of VOC is prohibited for cleanup operations unless equipment is used to collect the cleaning compounds and to minimize their evaporation to the atmosphere.
(ii) LP shall collect all organic solvent used to clean spray guns into a normally closed container.
(iii) LP shall pump or drain all organic solvent used for line cleaning into a normally closed container.
(iv) LP shall not use compounds containing more than 8.0 percent by weight of VOC for cleaning spray booth components other than conveyers, continuous coaters and their enclosures, and/or metal filters, unless the spray booth is being refurbished. If the spray booth is being refurbished, that is, the spray booth coating or other material used to cover the booth is being replaced, LP may not use more than 1.0 gallon of organic solvent to prepare the booth prior to applying the booth coating.
(v) LP shall control emissions from washoff operations by:
1. Using normally closed tanks for washoff; and
2. Minimizing dripping by tilting or rotating the part to drain as much organic solvent as possible.

c. Recordkeeping and Reporting

(1) LP shall submit to the Department an initial compliance certification upon startup of each new coating unit, line, or operation.
[06-096 C.M.R. ch. 129 § 7(A)]

The initial certification shall contain the following information:
(i) Name and location of the facility;
(ii) Name, address, and telephone number of the facility's Responsible Official;
(iii) Identification of each coating used on each coating line;

(iv) The mass of VOC per volume of each coating (e.g., lb VOC/gal), excluding water and exempt compounds, as applied, expected to be used each day on each on each coating line; and
(v) The time at which the facility's "day" begins if a time other than midnight is used to define a "day."
[06-096 C.M.R. ch. 129, § 7(A)(2)]

(2) LP shall keep records of the following:
(i) Name and identification of each coating; and
(ii) Mass of VOC per volume (e.g., lb VOC/gal), excluding water and exempt compounds, as applied used each month.
[06-096 C.M.R. ch. 129, § 7(B)(2)]

(3) LP shall notify the Department in writing within thirty (30) calendar days of the use of any coatings that do not meet the VOC content limit.
[06-096 C.M.R. ch. 129, § 8(B)(2)]

4. *Architectural and Industrial Maintenance (AIM) Coatings*, 06-096 C.M.R. ch. 151

This project will not make LP subject to *Architectural and Industrial Maintenance (AIM) Coatings*, 06-096 C.M.R. ch.151. This regulation applies to manufacture, sale, and application of architectural coatings. Architectural coating is defined as follows:

> *"Architectural coating" means a coating to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, and adhesives are not considered architectural coatings for the purposes of this rule.*

LP is not applying coatings to stationary structures or portable buildings at the site of installation.

5. *Control of Volatile Organic Compounds from Adhesives and Sealants*, 06-096 C.M.R. ch. 159

This project will not make LP subject to *Control of Volatile Organic Compounds from Adhesives and Sealants*, 06-096 C.M.R. ch. 159. The product data sheet for the adhesive to be used indicates a VOC content of 0.0105 g/L, less water and exempt compounds, as applied. The requirements of this rule do not apply to adhesives or sealants with a VOC content less than 20 g/L, less water and exempt compounds, as applied, pursuant to 06-096 C.M.R. ch. 159, § 3(A)(3). The caulk that will be used will be purchased from the manufacturer/supplier in 10.1-fluid ounce cartridges and is therefore also exempt pursuant to 06-096 C.M.R. ch. 159, § 3(A)(5).

6. *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products*, 40 C.F.R. Part 63, Subpart QQQQ

   National Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products, 40 C.F.R. Part 63, Subpart QQQQ, is applicable to the Specialty Finish Coating Line and the Miscellaneous Product Finishing Line. This equipment is in the subcategory "exterior siding and primed doorskins."

   The affected source is a collection of all coating operations and equipment (both automatic and manual) and storage containers and mixing vessels in which coatings, thinners, and cleaning materials are stored or mixed. [40 C.F.R. § 63.4682(b)]

   This regulation does not apply to the application of edge seals [40 C.F.R. § 63.4681(c)(1)(i)] or the Primer Finish Line [40 C.F.R. § 63.4681(c)(1)(iii)].

   This regulation is an applicable requirement that will be addressed in the facility's Part 70 license. Although not part of the New Source Review process, the requirements of this regulation are presented below for clarity and informational purposes since LP will be subject to them upon startup of the new finishing lines regardless of when this license is incorporated into the Part 70 license.

   a. Standards

      As a new affected source, LP shall limit organic HAP emissions to the atmosphere to no more than the applicable emission limit in Table 1 of the subpart. The limit for exterior siding is 0 grams of organic HAP per liter solids or 0.00 pounds of organic HAP per gallon of solids.

   b. Continuous Compliance

      Subpart QQQQ offers several options for emission standards. LP has elected to comply with the "compliant material option" described in § 63.4691(a).

      Compliance shall be demonstrated by recordkeeping which confirms that the Specialty Finish Coating Line and the Miscellaneous Product Finishing Line uses no coating, thinner, or cleaning material that contains organic HAP. Information from the supplier or manufacturer of the material, such as manufacturer's formulation data, may be relied on. Materials do not count (i.e., are exempt) if they contain organic HAP at less than 0.1% by mass for OSHA-defined carcinogens (as specified in 29 C.F.R. § 1910.1200(d)(4)) or if they contain less than 1.0% by mass for other organic HAP compounds. [40 C.F.R. § 63.4741(a)(4)]

The use of any coating, thinner, or cleaning material on the Specialty Finish Coating Line or the Miscellaneous Product Finishing Line that contains organic HAP not compliant with the standards listed above, is considered a deviation from the emission limitations that must be reported. [40 C.F.R. § 63.4742(b)]

c. Recordkeeping

LP shall maintain records for the Specialty Finish Coating Line and the Miscellaneous Product Finishing Line in accordance with 40 C.F.R. Part 63, Subpart QQQQ including, but no limited to, the following:

(1) A copy of each notification and report submitted to comply with this subpart;
(2) Information provided by material suppliers or manufacturers used to determine the mass fraction of organic HAP of coatings, thinners, and cleaners;
(3) A record of the coating operations in use (e.g., Specialty Finish Coating Line) and the compliance option used (e.g., compliant material) for each reporting period;
(4) The name and volume of each coating, thinner, and cleaning material used;
(5) The mass fraction of organic HAP for each coating, thinner and cleaning material used; and
(6) The date, time, and duration of any deviation.

[40 C.F.R. § 63.4730]

d. Notifications

(1) LP shall submit the Initial Notification required by 40 C.F.R. § 63.9(b) no later than 120 days after startup of either the Specialty Finish Coating Line or the Miscellaneous Product Finishing Line (whichever comes first). [40 C.F.R. § 63.4710(b)]

(2) LP shall submit the Notification of Compliance Status (NOCS) required by 40 C.F.R. § 63.9(h) no later than 30 calendar days after the end of the initial compliance period. [40 C.F.R. § 63.4710(c)]

The initial compliance period begins upon startup of the affected units and ends on the last day of the 12th month following that date. [40 C.F.R. § 63.4740]

The NOCS shall be submitted electronically pursuant to 40 C.F.R. §§ 63.4720(d)(2) – (4).

e. Reports

LP shall submit semiannual compliance reports according to the requirements of 40 C.F.R. §§ 63.4720(a)(1) - (7).

LP is required to submit semiannual monitoring reports as a condition of their Part 70 license. If LP submits a semiannual compliance report as required by Part 70 which includes all of the required information concerning deviations from any emission limitation in Subpart QQQQ, its submission shall be deemed to satisfy the semiannual reporting requirement of Subpart QQQQ.
[40 C.F.R. § 63.4720(a)(2)]

E. Finishing Line Ovens

The Primer Finish Line will consist of three lanes in parallel. Each of the three lanes has two ovens in series, Finishing Line Ovens #1 - #3 (5.0 MMBtu/hr each) followed by Finishing Line Ovens #4 - #6 (6.35 MMBtu/hr each).

The Specialty Finish Coating Line will consist of one lane with three ovens in series, Specialty Pre-Heat Oven #1 (3.15 MMBtu/hr) and Specialty Drying Ovens #1 and #2 (3.15 MMBtu/hr each).

All of these ovens are designed to fire propane and are referred to collectively as finishing ovens.

1. BACT Findings

Following is a BACT analysis for control of emissions from the finishing ovens.

a. Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

LP has proposed to burn only a low-ash content fuel (propane) in the finishing ovens. Additional add-on pollution controls are not economically feasible.

BACT for $PM/PM_{10}/PM_{2.5}$ emissions from the finishing ovens is the use of propane as a fuel and the emission limits listed in the table below.

b. Sulfur Dioxide (SO_2)

LP has proposed to fire only propane, an inherently low-sulfur fuel. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible.

BACT for SO_2 emissions from the finishing ovens is the use of propane. Emissions of SO_2 from these units are determined to be negligible.

c. Nitrogen Oxides (NO_x)

The finishing line ovens will all be equipped with low-NO_x burners (LNBs) which minimize the formation of NO_x by improving fuel/air mixing. The use of add-on control technologies for propane-fired units of such a small size is not economically feasible.

BACT for NO_x emissions from the finishing ovens is the use of propane, LNBs, and the emission limits listed in the table below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

Emissions of CO and VOC can be reduced by using oxidation catalysts or thermal oxidizers. Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the emission unit in question. These controls were determined to not be economically feasible.

BACT for CO and VOC emissions from the finishing ovens is the use of propane and the emission limits listed in the table below.

e. Emission Limits

The BACT emission limits for the finishing ovens were based on the following:

$PM/PM_{10}/PM_{2.5}$	–	0.7 lb/1,000 gal based on AP-42 Table 1.5-1 dated 7/08
NO_x	–	0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
CO	–	7.5 lb/1,000 gal based on AP-42 Table 1.5-1 dated 7/08
VOC	–	1.0 lb/1,000 gal based on AP-42 Table 1.5-1 dated 7/08
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the finishing ovens are the following:

Unit	Pollutant	lb/MMBtu
Finishing Line Ovens #1 - #3 (each)	PM	0.008
Finishing Line Ovens #4 - #6 (each)	PM	0.008
Specialty Pre-Heat Oven #1	PM	0.008
Specialty Drying Ovens #1 & #2 (each)	PM	0.008

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Finishing Line Ovens #1 - #3 (each)	0.04	0.04	0.04	0.25	0.41	0.05
Finishing Line Ovens #4 - #6 (each)	0.05	0.05	0.05	0.32	0.52	0.07
Specialty Pre-Heat Oven #1	0.02	0.02	0.02	0.16	0.26	0.03
Specialty Drying Ovens #1 & #2 (each)	0.02	0.02	0.02	0.16	0.26	0.03

LP shall demonstrate compliance with the emission limits above through performance testing upon request of the Department.

2. Visible Emissions

   Visible emissions from each of the finishing ovens shall not exceed 10% opacity on a six-minute block average basis.

   LP shall demonstrate compliance with the visible emission limit through performance testing upon request of the Department.

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

   Due to their size and not being "steam generating units," the finishing ovens are 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]

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

   The finishing ovens do not meet the definition of either *boiler* or *process heater* in 40 C.F.R. § 63.7575 since they are direct-fired heating sources where the combustion gases come into direct contact with the process materials. Therefore, the finishing ovens are not subject to *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*, 40 C.F.R. Part 63, Subpart DDDDD.

F. Pneumatic Systems

Materials, including fines, sawdust, and dust generated by various processes, storage bins, and conveying systems, are collected by several pneumatic systems made up of enclosures, ductwork, fans, and baghouses.

LP considered several control technologies for emissions of particulate matter from the pneumatic systems, including baghouses, cyclones, ESPs, and wet scrubbers. Baghouses were determined to have the highest control efficiency for this type of process and are commonly in use in the wood products industry as reflected in the RBLC database.

Eight baghouses will be affected by this project. Four existing baghouses (Baghouses # 1/2, 4, 6, and 9) will refurbished, replaced, and/or relocated. Existing Baghouses # 3, 5, 7, and 8 will be refurbished as necessary but will remain in their current locations. One new baghouse (Baghouse #1) will be installed.

The Department finds the use of baghouses and the visible emission limit listed below to represent BACT for particulate matter emissions (PM, PM_{10}, and $PM_{2.5}$) from the facility's pneumatic systems.

Visible emissions from each of the Pneumatic Systems Baghouses shall not exceed 10% opacity on a 6-minute block average basis. LP shall take corrective action if visible emissions exceed 5% opacity on a 6-minute block average basis. [06-096 C.M.R. ch. 101, § 3(B)(3)]

LP shall demonstrate compliance with the visible emission limit through performance testing upon request of the Department.

LP shall operate, record data, and maintain records from the following periodic monitors for the Pneumatic Systems:

1. Pressure drop for each baghouse recorded once per shift.
2. Records of any maintenance activities performed (planned or unplanned) on each baghouse.

G. Incorporation Into the Part 70 Air Emission License

Per *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.

H. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee. Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum potential emissions were calculated based on the following assumptions:

- CHU – TOS operating for 8,760 hr/year at licensed lb/hr limits. VOC converted from "as carbon" to "as propane plus formaldehyde.";
- Operation of the Dryers for 8,760 hr/year at licensed lb/hr limits. VOC converted from "as carbon" to "as propane plus formaldehyde.";
- Operation of the LSL Press for 8,550 hr/year at licensed lb/hr limits. VOC converted from "as carbon" to "as propane plus formaldehyde.";
- Operation of the Line 1 Press for 8,760 hr/year at licensed lb/hr limits. VOC converted from "as carbon" to "as propane plus formaldehyde.";
- Assumes LSL Press and Line 1 Press lines cannot run simultaneously. The emissions shown in the table below are based on the worst-case operating scenario (Line 1 Press or LSL Press) using licensed emission limits and hours of operation noted here;
- Annual PM and VOC emission limits on the Dry Wafer Storage Bins and LSL Flying Cut-off Saw;
- Annual VOC emission limit on the LSL Edge Seal Process;
- Annual combined VOC emission limit on the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line;
- Operation of all finishing line oven burners for 8,760 hr/year at licensed lb/hr limits; and
- Operation of the emergency engines for 100 hr/year.

Please note, this information provides the basis for fee calculation only and should not be construed to represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

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[1]
CHU – TOS Stack	20.1	20.1	16.7	154.0	154.0	4.3
CHU – Dryer Vent Stack (RTO Stack)	68.3	68.3	1.9	144.1	477.4	24.0
Dry Wafer Storage Bins	0.5	0.5	–	–	–	3.1
LSL Flying Cut-off Saw	2.5	2.5	–	–	–	8.6
LSL Press	–	–	–	–	–	32.6
Line 1 Press	53.9	53.9	6.6	89.8	42.0	–
LSL Edge Seal	–	–	–	–	–	1.1
Fire Pump	–	–	–	0.3	0.1	–
TOS Backup Pump	–	–	–	0.1	–	–
Finishing Line Ovens #1-#3	0.5	0.5	–	3.3	5.4	0.7
Finishing Line Ovens #4-#6	0.6	0.6	–	4.2	6.8	0.9
Specialty Pre-Heat Oven #1	0.1	0.1	–	0.7	1.1	0.2
Specialty Drying Ovens #1 - #2	0.2	0.2	–	1.4	2.3	0.3
Finishing Lines[2]	–	–	–	–	–	34.9
Total TPY	**146.7**	**146.7**	**25.2**	**397.9**	**689.1**	**110.7**

[1] All VOC emissions are listed as propane plus formaldehyde.
[2] Includes the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line.

III. AMBIENT AIR QUALITY ANALYSIS

LP previously submitted an ambient air quality impact analysis outlined in air emission license A-327-77-1-N (issued 8/26/2006) 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-327-77-5-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

All previous NSR Conditions pertaining to the Line 1 Press (formerly referred to as the OSB Press) are replaced by the following Condition (1):

(1) **Line 1 Press**

A. Control Equipment

1. Emissions of VOC and HAP from the Line 1 Press shall be controlled by the operation and maintenance of an RCO/RTO. The main forming line shall not operate unless the Press RCO/RTO is operating. For safety and fire hazard concerns, LP shall be allowed a maximum of 15 minutes from the time the RCO/RTO goes down to shut down the production line.
[06-096 C.M.R. ch. 115, BACT]

2. LP is licensed to fire propane or natural gas in the Press RCO/RTO.
[06-096 C.M.R. ch. 140, BACT]

3. When operated as an RCO, the maximum heat input to the Press RCO/RTO shall not exceed 7.0 MMBtu/hr. When operating as an RTO, the maximum heat input toe Press RCO/RTO shall not exceed 11.2 MMBtu/hr. Compliance shall be demonstrated by flow meter logs or fuel flow recording charts and heating values of 0.0915 MMBtu/gal for propane and 1,020 MMBtu/million scf of natural gas.
[06-096 C.M.R. ch. 140, BACT]

B. Production Limit

Until the Line 1 Press begins producing specialty paneling, production of OSB shall not exceed 600 tons of finished product per day on a seven-day rolling average basis. This condition becomes obsolete upon startup of the Line 1 Press to produce specialty paneling. [06-096 C.M.R. ch. 115, BACT]

C. Emission Limits
(Emission limits are on a 1-hour block average unless otherwise stated.)

1. Emissions from the Line 1 Press shall not exceed the following limits: [06-096 C.M.R. ch. 115, BACT]

Pollutant	gr/dscf
PM	0.015

2. Emissions from the Line 1 Press shall not exceed the following limits: [06-096 C.M.R. ch. 115, BACT]

Controlled by…	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
RCO	12.30	12.30	12.30	1.50	19.90	9.50	1.75 (as carbon)
RTO	12.30	12.30	12.30	1.50	20.50	9.60	1.75 (as carbon)

D. Visible Emissions

1. When the Line 1 Press is operating, visible emissions from Stack #3 shall not exceed 20% opacity on a 6-minute block average except for periods of startup, shutdown, malfunction, or approved maintenance. [06-096 C.M.R. ch. 115, BACT]

2. Approved Maintenance

During the bake-out process, visible emissions from Stack #3 shall not exceed 30% opacity on a 6-minute block average basis except for 30 minutes during which time visible emissions shall not exceed 70% opacity. Each bake-out process shall not exceed 2 hours. [06-096 C.M.R. ch. 101, § 4(C)]

3. LP shall demonstrate compliance with the alternative visible mission limits during RTO bake-out through conducting observations consistent with 40 C.F.R. Part 60, Appendix A, Method 9. Observations shall be started 20 to 30 minutes after the end of the warm-up cycle and shall be conducted for at least 18 minutes. [06-096 C.M.R. ch. 115, BACT]

4. Upon request by the Department, LP shall demonstrate compliance with the visible emission limits for Stack #3 through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9. [06-096 C.M.R. ch. 115, BACT]

E. Compliance with the emission limits associated with operation as an RTO shall be demonstrated by performance testing upon request using test methods approved by the Department. [06-096 C.M.R. ch. 115, BACT]

F. LP shall demonstrate compliance with the PM gr/dscf and lb/hr emission limits for operation as an RCO through performance testing conducted every other calendar year. To allow time for project construction, the next compliance test is due no later than 12/31/2022. [06-096 C.M.R. ch. 115, BACT]

G. LP shall demonstrate compliance with the NO_x lb/hr emission limit for operation as an RCO through performance testing conducted every five calendar years. The next compliance test is due no later than 12/31/2025. [06-096 C.M.R. ch. 115, BACT]

H. LP shall demonstrate compliance with the VOC lb/hr emission limit for operation as an RCO through performance testing conducted every other calendar year. To allow time for project construction, the next compliance test is due no later than 12/31/2022. [06-096 C.M.R. ch. 115, BACT]

I. Upon request by the Department, LP shall conduct performance testing to demonstrate compliance with the PM_{10}, $PM_{2.5}$, SO_2, and CO lb/hr emission limits for operation as an RCO using test methods approved by the Department.
[06-096 C.M.R. ch. 115, BACT]

J. Periodic Monitoring

LP shall operate, record data, and maintain records from the following periodic monitors for the Line 1 Press:

1. Date, time, and duration of each bake-out process including start/end times of the warm-up cycle.
2. Records of Method 9 observations conducted during each bake-out process including date, time, and results.
3. Records of any maintenance activities performed (planned or unplanned) on the Press RCO/RTO.

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

All previous NSR Conditions pertaining to the OSB Spray Booths are replaced by the following Condition (2):

(2) **Finishing Lines**

A. Emissions of VOC from the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line (combined) shall not exceed 34.9 tpy (12-month rolling total basis). Compliance shall be demonstrated by monthly calculations of VOC use for the Main Line Spray Booth, Primer Finish Line, Specialty Finish Coating Line, and Miscellaneous Product Finishing Line. [06-096 C.M.R. ch. 115, BACT]

B. LP shall comply with the most current version of 06-096 C.M.R. ch. 129 applicable to the finishing lines. [06-096 C.M.R. ch. 115, BACT]

C. LP shall comply with the most current version of 40 C.F.R. Part 63, Subpart QQQQ applicable to the finishing lines. [06-096 C.M.R. ch. 115, BACT]

D. Visible emissions from any finishing line spray booth which vents outside shall not exceed 10% opacity on a 6-minute block average basis. Upon request by the Department, LP shall demonstrate compliance with the visible emission limit through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9. [06-096 C.M.R. ch. 115, BACT]

E. LP shall keep records of the dates the particulate filters are replaced on each spray booth. [06-096 C.M.R. ch. 115, BACT]

(3) **Finishing Line Ovens**

A. The finishing line ovens shall only fire propane. [06-096 C.M.R. ch. 115, BACT]

B. The finishing line ovens shall each be equipped with low-NO_x burners. [06-096 C.M.R. ch. 115, BACT]

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

Unit	Pollutant	lb/MMBtu
Finishing Line Ovens #1 - #3 (each)	PM	0.008
Finishing Line Ovens #4 - #6 (each)	PM	0.008
Specialty Pre-Heat Oven #1	PM	0.008
Specialty Drying Ovens #1 & #2 (each)	PM	0.008

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Finishing Line Ovens #1 - #3 (each)	0.04	0.04	0.04	0.25	0.41	0.05
Finishing Line Ovens #4 - #6 (each)	0.05	0.05	0.05	0.32	0.52	0.07
Specialty Pre-Heat Oven #1	0.02	0.02	0.02	0.16	0.26	0.03
Specialty Drying Ovens #1 & #2 (each)	0.02	0.02	0.02	0.16	0.26	0.03

E. Visible emissions from each of the finishing line ovens shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

F. LP shall demonstrate compliance with the emission limits above through performance testing upon request of the Department. [06-096 C.M.R. ch. 115, BACT]

All previous NSR Conditions pertaining to the Pneumatic Systems are replaced by the following Condition (4):

(4) **Pneumatic Systems**

A. Emissions of particulate matter from the Pneumatic Systems shall be controlled by the operation and maintenance of baghouses. [06-096 C.M.R. ch. 115, BACT]

B. Visible emissions from each of the Pneumatic Systems Baghouses shall not exceed 10% opacity on a 6-minute block average basis. LP shall take corrective action if visible emissions exceed 5% opacity on a 6-minute block average basis.
[06-096 C.M.R. ch. 101, § 3(B)(3)]

C. Upon request by the Department, LP shall demonstrate compliance with the visible emission limit for the Pneumatic Systems through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9. [06-096 C.M.R. ch. 115, BACT]

D. Periodic Monitoring

LP shall operate, record data, and maintain records from the following periodic monitors for the Pneumatic Systems:

1. Pressure drop for each baghouse recorded once per shift.
2. Records of any maintenance activities performed (planned or unplanned) on each baghouse.

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

(5) **Future Project Emissions Reporting**

A. LP shall monitor, calculate, and maintain a record of the annual emissions, in tons per year on a calendar year basis, of PM_{10}, $PM_{2.5}$, NO_x, CO, and VOC for all emission units that are part of the 2021 Expansion Project (modified or affected). LP shall monitor, calculate, and maintain a record of the annual emissions for a period of 5 years following the resumption of regular operations after the change.
[40 C.F.R. § 52.21(r)(6)]

B. If the annual emissions, in tons per year, from the project exceed the baseline actual emissions, excluding any emission increase unrelated to the project and due to demand growth, for any of these pollutants by an amount equal to or greater than the significant emissions increase level for that pollutant as identified in this NSR license, LP shall submit a report to the Department and EPA within 60 days after the end of the calendar year which contains the following:

1. The facility name, address, and phone number;
2. The annual emissions for the project; and
3. Any other information that the facility wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection.)

[40 C.F.R. § 52.21(r)(6)(v)]

(6) LP 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 the requested operation. [06-096 C.M.R. ch. 140 § 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 5th DAY OF MARCH, 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for _____
MELANIE LOYZIM, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/8/2021
Date of application acceptance: 1/8/2021

Date filed with the Board of Environmental Protection:

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

FILED

MAR 05, 2021

State of Maine
Board of Environmental Protection