Louisiana-Pacific Corporation **Aroostook County** **New Limerick, Maine** **A-327-77-1-N**	**Departmental** **Findings of Fact and Order** **New Source Review License**

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 M.R.S.A, Section 344, Section 590, Chapter 115 and the Department finds the following facts:

I. Registration

A. Introduction

FACILITY	Louisiana-Pacific Corporation (LP)
Part 70 LICENSE NUMBER	A-327-70-A-I
LICENSE TYPE	Major Modification
NAIC CODES	321219
NATURE OF BUSINESS	Oriented Strand Board Manufacturer
FACILITY LOCATION	240 Station Road, New Limerick, Maine
DATE OF NSR LICENSE ISSUANCE	September 28, 2006

B. Modification Description and Affected Emission Equipment

LP proposes to expand operations at the Oriented Strand Board (OSB) facility in New Limerick, Maine. Specifically, an Oriented Strand Lumber (OSL) line will be added to create a new product. To manufacture OSL, modifications will be required at dry screening and blending, and new equipment will be required for forming, pressing, and finishing. Emissions from the new OSL press will be routed to the existing control device for the OSB press, and emissions from new pneumatic systems will exhaust through baghouses. LP also plans to install a new 278 MMBtu/hr waste wood fired Central Heating Unit (CHU) to replace heat presently generated by existing dryer suspension burners and the existing thermal oil heaters (TOH). Heat output from the CHU will be split, one stream providing direct contact heating for the existing process dryers and another stream for the thermal oil system (TOS). The thermal oil system will be providing heat for the presses, buildings, log ponds, and the production of steam in the steam generator for the OSL press. A dry electrostatic precipitator (ESP) will be relied upon for reduction of particulate matter emissions from the thermal oil system exhaust stream. The existing back-up fuel oil burners for the rotary dryers will be removed.

The following emission units are addressed in this license:

EMISSION UNIT ID	UNIT CAPACITY	UNIT TYPE
Central Heating Unit	278 MMBtu/hr waste wood	Provides dryer process heat and indirect heat for thermal oil system,
Dryer RTO	13.5 MMBtu/hr Propane or Natural Gas	Regenerative Thermal Oxidizer
Press RTO	11.2 MMBtu/hr Propane or Natural Gas	Regenerative Thermal Oxidizer/ Regenerative Catalytic Oxidizer
Core Line Dryer	15.25 Oven Dried Ton (ODT)/hr	Dryer
Surface Line Dryer	15.25 ODT/hr	Dryer
OSL Press	600 Tons of Finished Product (TFP)/day production limit	OSL Press
OSL Pneumatic Systems	N/a	Pneumatic Conveyors with Baghouses

Louisiana-Pacific Corporation (LP) has additional activities not listed in the emission equipment table above as they will not be modified as part of this license application or as they are not deemed significant emission units, including two new methylene-diisocyanate (MDI) storage tanks and the emergency generator.

The following emission units will be shutdown following an appropriate shakedown period of the new CHU:

EMISSION UNIT ID	UNIT CAPACITY	UNIT TYPE
#1 Thermal Oil Heater	27.1 MMBtu/hr Wood	Heater
#2 Thermal Oil Heater	27.1 MMBtu/hr Wood	Heater
#1 & #2 Thermal Oil Heater Shared Oil Gun	20.0 MMBtu/hr Oil	Heater

C. Application Classification

LP is a major source with respect to the Maine Department of Environmental Protection’s Prevention of Significant Deterioration (PSD) permitting program as potential emissions of at least one regulated pollutant exceeds the major source threshold of 100 tons per year (tpy). LP is also considered a major nonattainment new source review (NSR) source as it has the potential to emit more than 50 tpy of volatile organic compounds (VOC) and the site is located in the Ozone Transport Region (OTR). With respect to oxides of nitrogen (NO_X), U.S. EPA has issued a waiver for certain Maine counties, including Aroostook, which waives the requirement for nonattainment NSR for NO_X major modifications.[1] Hence, only major modifications of VOC require nonattainment NSR.

Accordingly, for proposed projects, all regulated pollutants with emissions exceeding the applicable major modification threshold are subject to PSD or nonattainment NSR (NNSR). In all, five criteria pollutants exceed the applicable major modification thresholds and are subject to full PSD or NNSR review. For PSD, as summarized in the table below, these pollutants are particulate matter (PM), particulate matter less than 10 microns in diameter (PM_{10}), NO_X, and carbon monoxide (CO). NNSR is required based on the emission increases of VOC. Lead (Pb) and sulfur dioxides (SO_2) are below the major modification thresholds.

PROJECT EMISSIONS AND MAJOR MODIFICATION THRESHOLDS

	PM (tpy)	PM_{10} (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)	Lead (tpy)
CHU - Dryer (calculation)	52	52	103	332	17	-0.4	-1.01E-02
CHU - TOS Exhaust	20	20	154	154	23	17	4.96E-03
OSL Press	54	54	90	42	10	7	-
Pneumatic Systems	27	27	-	-	6	-	-
MDI Tanks	-	-	-	-	-	-	-
Total Increases	153	153	347	529	57	23	-5.15E-03
Major Modification Threshold	25	15	40	100	40	40	0.60
Major Modification?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**

Accordingly, the application has been processed as a major modification of a major source and has been processed through Chapter 115 of the Department's regulations.

II. BEST PRACTICAL TREATMENT (BPT)

A. <u>Introduction</u>

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 Chapter 100 of the Department's regulations. 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 Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting

[1] Federal Register, February 3, 2006, Volume 71, No. 23, page 5791. Effective March 6, 2006.

air emission controls considering economic, environmental and energy impacts. New and modified sources of CO, NO_X, and PM_{10} are subject to BACT.

For VOC sources, BPT requires a demonstration that emissions are achieving the Lowest Achievable Emission Rate (LAER), as defined in Chapter 100 of the Department's regulations. LAER is the most stringent emission rate as contained in the implementation plan for any State for that class or category of sources or the most stringent emission limitation achieved in practice by that class or category of source. New and modified sources of VOC associated with this proposed project are subject to LAER.

B. Description of Modified and New Sources

The proposed modification would allow LP to manufacture Oriented Strand Lumber (OSL). The OSL process line will be integrated into the existing OSB process infrastructure, incorporating process equipment common to both OSL and OSB production where possible. This project will allow LP to produce different lengths, widths, thicknesses, and mechanical properties of lumber to meet demanding market conditions. The following sections provide a process overview and identifies potential changes as a result of the proposed project.

Green End

This area will be essentially the same as the existing green end operations. The manufacturing process begins with trucks bringing the harvested logs, primarily aspen and maple, to the mill. Logs are debarked (with bark used as fuel), conveyed through hot ponds, and sent to the flakers (which will require a new batch feeder for stranding OSL as the strand size differs from OSB). The wet strands are then conveyed to storage bins. Dust formation in this area of the mill is minimal due to the nature of the material (i.e., green wood with an estimated 50% moisture content).

Rotary Dryers/Wood Burners

Wet strands from the green end area are transferred to one of two single-pass rotary dryers. The existing wood-fired suspension burners in the rotary dryers will be removed, with direct heat to be provided by the new Central Heating Unit (CHU), a 278 MMBtu/hr waste wood fired unit. The existing back-up fuel oil-fired burners will also be removed. Exhaust from each dryer is routed through a wet electrostatic precipitator (WESP) for PM and PM_{10} removal. Upon exiting the WESP, the exhaust stream is sent to a regenerative thermal oxidizer (RTO) for CO and VOC reduction.

Screening/Blending

After drying, the strands are screened by size (a new screener is required for OSL), conveyed to dry bins, and sent to the blenders, where resin and wax are mixed with the strands. To accommodate the increase in resin use required for

OSL, two new MDI storage tanks will be added with the same volume as the two existing MDI tanks (19,000 gallons).

New OSL Forming Line

Following the blenders, new diverter gates will direct material to either the existing OSB forming line or the new OSL forming line. At the new OSL forming station, strands will be oriented properly and formed into mats. Saws will cut the mats to proper size, and the sized mats are conveyed to the board press. Any mats that are formed poorly will be sent to a material reject system and recycled back to the process. Dust from this process will be collected via pick-up points along the process line and pneumatically conveyed to the general dust collectors. Material collected in the baghouses is recycled back to the process.

New OSL Board Press

The press will be a steam injection, single-opening type with a nominal design thickness of 3½ inches. The acceptable mats will be transferred to press platens and taken into the press, where steam is injected into the furnish, both curing the board and heating the press. The press activates the applied resin and bonds the product into a single solid entity. After the pressing cycle is complete, the pressed boards (i.e., billets) are sent to the finishing area. The press exhaust will be routed to the existing OSB press RTO/regenerative catalytic oxidizer (RCO) for VOC and HAP removal before exhausting to the atmosphere.

The CHU will supply steam for the press. The platens on the press will remain heated via use of heated thermal oil. Also, a release agent will be sprayed on the bottom face material conveying surface of the press screen and the top face surface of the mat furnish to prevent sticking.

Central Heating Unit

LP will be installing a CHU for energy efficiency improvements. The CHU will be a waste wood fired device with a maximum heat input capacity of 278 MMBtu/hr. The heat output from the CHU will be split into two distinct streams based upon heat demand load: a direct-contact heating stream for the two rotary dryers and an indirect-contact stream for the thermal oil system. The thermal oil system will be providing heat for the presses, buildings, log ponds, and the production of steam in the steam generator for the OSL press. The direct-contact stream will pass through the rotary dryers and exhaust through each dryer's WESP/RTO control devices. The thermal oil system stream will vent through a dry ESP for PM removal.

New OSL Cooling and Finishing Area

Upon exiting the press, trim saws will remove excess edges and ends from the billets. Acceptable billets will be conveyed to a wicket-type cooler. After cooling, the billets are stacked and sent to finishing. Reject billets will be sold as off spec material, recycled back into the process or hogged for fuel in the CHU. At finishing, a series of conveyors and saws will be used to create various OSL products, such as Studs, Headers/Beams, and Posts. A sander will smooth the billets, and a ripsaw will cut the billets to the proper width. They will then be stacked, markings will be applied, and the stacks will be strapped together for shipment. If desired, the product can be sent to additional cut-to-length and cut-to-width saws before shipment. Dust formed during this process will be collected via pick-up points along the process line and pneumatically conveyed to the finishing end dust collection baghouse. Excess material from the saw line will be sent through a trim hog and may be used as fuel.

Pneumatic Systems

LP will be modifying existing pneumatic systems and installing new pneumatic systems as part of the OSL expansion. Four new baghouses will be installed, and one existing baghouse will be relocated outside. New baghouses include:

Dry Fuel Silo Baghouse – atop the new dry fuel bin

Green End Dust Collection – near bark hog

Dry Bin/OSL Forming – south of dryers

Finishing end baghouse – near new finishing area

The existing dryer area baghouse will be relocated outdoors, south of the dryers.

Existing Thermal Oil Heaters

The existing thermal oil heaters will no longer be required once the OSL line has been started-up and the CHU has undergone an appropriate shake-down period (i.e., 180 days after start-up). These heaters will be permanently shutdown and removed from service at that time.

Emergency Generator

LP will be installing a 300 kW diesel-fired emergency generator. As an emergency generator, it will be limited to less than 500 hours of operation per year. LP will utilize low-sulfur (500 ppm) diesel fuel in the emergency generator to minimize emissions of SO_2.

C. Control Reviews

The BACT and LAER analyses submitted by LP included identification of the control technologies currently in use for reducing emissions, a review of vendor literature, as available, and a review of the RACT/BACT/LAER Clearinghouse (RBLC). For BACT purposes, technical feasibility, control effectiveness, and economics were considered in selecting BACT for new or modified equipment. For purposes of BACT and state BPT, the following potential control technologies were considered:

Pollutant	Listed Control Technologies	Location of Control
NO_X	Regenerative Selective Catalytic Reduction (RSCR)	Post-Process
	EcoTube® Systems	Combustion Chamber
	Selective Catalytic Reduction (SCR)	Post-Process
	Selective Non-Catalytic Reduction (SNCR)	Pre- or Post-Process
	Selective Catalytic Oxidation and Scrubbing ($SCONO_X$)	Post-Process
	Water/Steam injection (WSI)	Combustion Chamber
	Staged Combustion	Combustion Chamber
	Flue Gas Recirculation	Combustion Chamber
	Low NO_X Burners	Combustion Chamber
	Reduced Air Preheat	Combustion Chamber
	Low Excess Air	Combustion Chamber
	Good Design/Operation	In-Process
	Change of Materials (Resin)	In-Process
CO	Catalytic Oxidation	Post-Process
	RCO / RTO	Post-Process
	Good Design/Operation	In-Process
PM_{10}	Baghouse	Post-Process
	Electrostatic Precipitator (ESP)	Post-Process
	Wet Electrostatic Precipitator (WESP)	Post-Process
	Multiclones	Post-Process
	Good Design/Operation	In-Process
SO_2	Wet Scrubber (Dual Alkali)	Post-Process
	Good Design/Operation	In-Process

Central Heating Unit, Dryer System

NO_X

BACT for the Central Heating Unit, Dryer system is use of low NO_X burners on the RTO and staged combustion with overfire air on the central heating unit with an emission limit of 32.9 lb/hr.

NO_X technologies evaluated:

1. RSCR – Requires reheating of exhaust flue gas with either propane or No. 2 fuel oil prior to entering the catalyst. Cost/ton for the Thermal Oil System exhaust was estimated to be $36,000, and would likely be similar in nature for costs for the dryer system exhaust.
2. SCR – infeasible given high particulate loading associated with the proper temperature range in the system reduces the number of active catalyst sites for the required reaction. Alkalinity of wood ash can poison catalyst.
3. SNCR – injection of ammonia in the combustion chamber of CHU negatively impacts process operations of the dryers. Using SNCR

downstream of the drying process would require reheating of the exhaust stream for the reaction to occur, resulting in the generation of additional NO_X emissions to obtain NO_X reductions.

4. Ecotube Systems – Reagent injection in the combustion chamber is infeasible for the reasons detailed for SNCR. For air injection, it was concluded that the proposed staged combustion design with overfire air, providing a 0.23 lb NO_X/MMBtu provides equivalent or better performance. If, however, the 0.23 lb NOx/MMBtu limit is not met, LP shall reevaluate this option.
5. SCONOX – Not proven technology for units other than natural gas-fired turbines.
6. Water/Steam Injection – Contradicts purpose of process dryers by adding moisture to the system.
7. Flue Gas Recirculation – Applying FGR as a means of controlling NO_X is considered a relatively ineffective method for wood-fired combustion units.
8. Low NO_X burners – not feasible in the CHU itself as it fires solid-fuels.
9. Low Excess Air – Low level of overall excess air will cause incomplete combustion, resulting in increased NO_X emissions and is considered technically infeasible for the CHU.

The 32.9 lb/hr emission limit is lower than most comparable entries in the RBLC database.

CO

BACT for the Central Heating Unit, Dryer system is good combustion practices and the RTO on the dryers with a 109 lb/hr emission limit.

CO control technologies evaluated:

1. Catalytic oxidation – For wood combustion operations, high alkalinity of wood ash particles inhibits catalyst performance. If installed downstream of PM control device, reheating of the combustion stream would be required.
2. RCO – For similar reasons as for catalytic oxidation, an RCO is technically infeasible. Industry practice has illustrated that RCO technology has not successfully been applied to rotary-type wood chip dryers.
3. RTO – relied upon as control device for VOC reductions from the drying system, may provide ancillary benefit of CO reduction.

With respect to the combustion emissions, good combustion practices using the staged combustion with overfire air is deemed BACT for CO. The 109 lb/hr emission limit falls within the range of limits detailed in the RBLC database.

PM and PM_{10}

BACT for the Central Heating Unit, Dryer system is the WESP with a 15.6 lb/hr emission limit.

PM control technologies evaluated:

1. Baghouse – Technically infeasible given the moisture content of exhaust from the dryer system.
2. Dry ESP - Technically infeasible given the moisture content of exhaust from the dryer system.
3. WESP – Highest ranked control device that is technically feasible.

The WESP is consistent with RBLC determinations for similar dryers.

SO_2

BPT for the Central Heating Unit, Dryer system is good combustion practices with low sulfur fuel (i.e., wood).

SO_2 control technologies evaluated:

1. Wet scrubber – while technically feasible, environmental considerations such as additional fresh water usage and waste disposal ponds are significant drawbacks given the limited amount of SO_2 reduction anticipated. Costs per ton removed would easily exceed $10,000.
2. Good combustion practices and use of low sulfur fuel – best practice.

BPT limit is 0.43 lb/hr.

VOC

For LAER, the existing license limit of 5.6 lb/hr (as carbon) is lower than emission limits identified in the RBLC for similar emission units and is therefore sufficient for the purposes of LAER. RBLC entries are summarized as follows:

Company	Location	Overall Limit
Poltach Corp.	Itasca, MN	8 lb/hr
Weyerhaeuser	Crawford, MI	18.6 lb/hr
Louisiana-Pacific	Sawyer, WI	22.84 lb/hr
Louisiana-Pacific	Jasper, TX	29.54 lb/hr
Louisiana-Pacific (Carthage)	Panola, TX	29.54 lb/hr
Louisiana-Pacific	MI	31.6 lb/hr

Company	Location	Overall Limit
Weyerhaeuser	Crawford, MI	43.2 lb/hr
Louisiana-Pacific	Clark County, AL	47 lb/hr
Georgia-Pacific	Liberty, FL	63.1 lb/hr
Georgia-Pacific	Calhoun, AR	159.5 lb/hr

<u>Central Heating Unit, Thermal Oil System</u>

NO_X

BACT for the Central Heating Unit, Thermal Oil System (CHU-TOS) is staged combustion with overfire air on the central heating unit with an emission limit of 0.23 lb/MMBtu (per stack test upon request by the Department) and a monitored 200 ppm_{dv} corrected to 7% O_2 based on a F factor of 9,600 dscf/MMBtu, a 7% excess $_{O2}$ on a 30-day rolling average.

NO_X technologies evaluated:

1. RSCR – Requires reheating of exhaust flue gas with either propane or No. 2 fuel oil prior to entering the catalyst. Cost/ton for the Thermal Oil System exhaust was estimated to be $36,000, and would likely be similar in nature for costs for the dryer system exhaust.
2. SCR – infeasible given high particulate loading associated with the proper temperature range in the system reduces the number of active catalyst sites for the required reaction. Alkalinity of wood ash can poison catalyst.
3. SNCR – injection of ammonia in the combustion chamber of CHU negatively impacts process operations of the dryers. Using SNCR downstream of the secondary combustion chamber requires injection prior to the first radiant heater for the thermal oil system. However, there is inadequate residence time to achieve a reasonable NO_X reduction and prevent ammonia slip. The residence time cannot be increased because of the maximum film temperature limitations of the thermal oil.
4. Ecotube Systems – Reagent injection in the combustion chamber is infeasible for the reasons detailed for SNCR. For air injection, it was concluded that the proposed staged combustion design with overfire air, providing a 0.23 lb NO_X/MMBtu provides equivalent or better performance.
5. SCONOX – Not proven technology for units other than natural gas-fired turbines.
6. Water/Steam Injection –Adding moisture to a wood combustion system is considered ineffective for reducing NO_X emissions.

7. Flue Gas Recirculation – Applying FGR as a means of controlling NO_X is considered ineffective for wood-fired combustion units.
8. Low NO_X burners – not feasible in the CHU itself as it fires solid-fuels.
9. Low Excess Air – Low level of overall excess air will cause incomplete combustion, resulting in increased NO_X emissions and is considered technically infeasible for the CHU.

For units without post-combustion controls, the 0.23 lb NO_X/MMBtu limit matches the lowest limit detailed in the RBLC database.

CO

BACT for the CHU-TOS is good combustion practices and with a 0.23 lb/MMBtu limit.

CO control technologies evaluated:

1. Catalytic oxidation – For wood combustion operations, high alkalinity of wood ash particles inhibits catalyst performance. If installed downstream of PM control device, reheating of the combustion stream would be required.
2. RCO – For similar reasons as for catalytic oxidation, an RCO is technically infeasible. Industry practice has illustrated that RCO technology has not successfully been applied to wood-combustion operations.
3. RTO – generally installed as a control device for VOC reductions. For the thermal oil system, inlet concentrations of VOC are likely too low to provide control without substantial auxiliary fuel and likely not at a reasonably high control efficiency. Without sufficient VOC to justify use of an RTO, it is not a feasible option for ancillary CO reductions.

BACT for CO is 0.23 lb CO/MMBtu.

PM and PM_{10}

BACT for the CHU-TOS is a dry ESP with a 0.03 lb/MMBtu emission limit.

For PM control, vendors have indicated that a baghouse or ESP would provide equivalent control (i.e., to meet the proposed 0.03 lb/MMBtu limit). However, for baghouses on wood-fired boilers there is an overriding safety concern as baghouse bags are more susceptible to fires. Operationally, baghouses require higher maintenance and have a larger pressure drop than an ESP, leading to higher costs. Hence, an ESP is the preferred control option for the site.

Vendors are guaranteeing a level of control of 0.030 lb/MMBtu for PM_{10}. The proposed emission limit guarantee is equivalent to the most stringent NSPS Db PM limit for comparable units. While the Industrial Boiler Maximum Achievable

Control Technology (MACT) standard (40 CFR 63 Subpart DDDDD)[2] includes a PM limit of 0.025 lb/MMBtu, this limit has been established as a surrogate for metal HAP as the MACT standards do not regulate criteria pollutants. Additionally, the MACT standard contains alternative compliance options specifically for Total Selected Metals, such that not all sources become subject to the surrogate PM standard. Accordingly, the most stringent federal regulatory standard for PM that exists is the 0.030 lb/MMBtu per NSPS Subpart Db.

LP has performed an incremental cost analysis to compare anticipated costs for the proposed control system, guaranteed to a level of control of 0.030 lb/MMBtu, versus a larger control system which would be necessary to reduce emissions to 0.025 lb/MMBtu. The incremental cost effectiveness is almost $7,600 per ton of pollutant removed.

BACT is determined to be an emission limit of 0.03 lb/MMBtu.

SO_2

BPT for the CHU-TOS is good combustion practices with low sulfur fuel (i.e., wood).

SO_2 control technologies evaluated:

1. Wet scrubber – while technically feasible, environmental considerations such as additional fresh water usage and waste disposal ponds are significant drawbacks given the limited amount of SO_2 reduction anticipated. Costs per ton removed exceeds $10,000.
2. Good combustion practices and use of low sulfur fuel – best practice.

BPT limit is 0.025 lb/MMBtu.

VOC

For LAER, RBLC entries for wood-fired combustion units, not including multi-fuel units, are summarized as follows:

Company	Location	Throughput	Overall Limit
Louisiana–Pacific	Sawyer, WI	19.4 MMBtu/hr	0.026 lb/MMBtu
Louisiana-Pacific	Sawyer, WI	23.8 MMBtu/hr	0.026 lb/MMBtu
Potlach Corp.	Nevada, AR	110,000 lb/hr	0.034 lb/MMBtu
Deridder Paper Mill	Beauregard, LA	454.29 MMBtu/hr	0.034 lb/MMBtu
Inland Paperboard and Packaging, Inc.	Floyd, GA	856 MMBtu/hr	0.05 lb/MMBtu
Sierra Pacific Industries	Plumas, CA	245.3 MMBtu/hr	0.05 lb/MMBtu
Deltic Timber Corp.	Columbia, AR	64.3 MMBtu/hr	0.07 lb/MMBtu
Del Tin Fiber, LLC	Union, AR	291 MMBtu/hr	0.073 lb/MMBtu
West Fraser (South), Inc.	Union, AR	29.63	0.1 lb/MMBtu

[2] 40 CFR 63 Subpart DDDDD establishes a PM requirement as a surrogate for metal hazardous air pollutants.

Gulf States Paper Corp.	Hale, AL	98 MMBtu/hr	0.1 lb/MMBtu
International Paper	Columbus, NC	600 MMBtu/hr	0.213 lb/MMBtu

The wood-fired CHU will have potential VOC emissions of 0.025 lb/MMBtu (as carbon). This emission rate is more stringent than any of the VOC limits achieved in practice by analogous waste wood only combustion boilers.

OSL Press Vent

NO_X

BACT for the OSL Press Vent is the use of low NO_X burners on the RTO/RCO with an emission limit of 20.5 lb/hr.

NO_X technologies evaluated:

1. Change of Materials (Resin) – Change of resin formulation would potentially lead to unacceptable repercussions in product quality and is therefore not considered a feasible option.
2. Combustion Process Controls - Additional NO_X emissions from the press result from the combustion of the exhaust stream in an RTO/RCO. Hence, NO_X emissions will be generated from the presence of nitrogen compounds in the exhaust stream as well as from the combustion of propane in the existing control device. NO_X controls identified previously are generally viewed as appropriate for combustion devices such as boilers or combustion turbines. As such, the control technologies listed are not considered feasible for use on the proposed press with an RTO/RCO configured with low NO_X burners.

CO

BACT for the OSL Press Vent is use of the existing press RTO/RCO with an emission limit of 9.6 lb/hr.

PM and PM_{10}

BACT for the OSL Press Vent is an emission limit of 12.3 lb/hr.

PM control technologies evaluated:

1. Baghouse – Technically infeasible given the blinding of filters from the presence of waxes and resins.
2. Dry ESP - Technically infeasible given the waxes and resins present in the exhaust stream.
3. WESP – Estimated cost effectiveness likely in excess of $100,000 per ton of pollutant removed.
4. Multiclones – Technically infeasible for collection of condensable PM, a significant fraction of emissions from the press.

VOC

For LAER, the existing license limit of 1.8 lb/hr (as carbon) is lower than emission limits identified in the RBLC for similar emission units and is therefore sufficient for the purposes of LAER. RBLC entries are summarized as follows:

Company	Location	Overall Limit
Louisiana-Pacific (Carthage)	Panola, TX	5.23 lb/hr
Louisiana-Pacific	Jasper, TX	5.23 lb/hr
Louisiana-Pacific	Sawyer, WI	6.66 lb/hr
Louisiana-Pacific	MI	9.1 lb/hr
Georgia-Pacific	Liberty, FL	10 lb/hr
Weyerhaeuser	Crawford, MI	19.5 lb/hr
Georgia-Pacific	Calhoun, AR	20.05 lb/hr
Georgia-Pacific	Calhoun, AR	25.3 lb/hr
International Paper	Nacogdoches, TX	56.3 lb/hr
Louisiana-Pacific	Clark County, AL	77 lb/hr

OSL Pneumatic Systems (All)

For PM, baghouses with an exit grain loading of 0.005 grains/dscf is considered BACT.

Emergency Generator

The emergency diesel generator is a 300 kW unit and will be limited to less than 500 hours of operation per year. The generator will fire low-sulfur diesel fuel.

D. VOC Offsets

The proposed OSL expansion project results in a net VOC emissions increase of 57 tpy. This increase is identified as significant, thus requiring the review of the project under Non-Attainment New Source Review (NNSR) due to the inclusion of Maine in the Ozone Transport Region. One segment of the NNSR process is the need to obtain offsets for each ton of VOC increase through Maine regulations found in Chapter 113. Consistent with the requirements of Chapter 113, an offset ratio of 1.15 is applied to any moderate non-attainment significant project. Therefore, offsets are required in the amount of 67 tons.

Chapter 113 allows for trading of NO_x emissions credits for VOC offsets, without the application of an additional ratio. Subsequent to the development of Chapter 113, the State of Maine and the State of Massachusetts entered into a Memorandum of Understanding (MOU) for the trading of registered NOx credits in Massachusetts for required NOx offsets in Maine. Consistent with both the MOU and the allowance for NOx for VOC trading, LP will be purchasing NOx emissions credits from a registered source in Massachusetts for use as VOC offsets in Maine. This approach is deemed beneficial to the air quality of Maine since it represents an emissions decrease for a source upwind of Maine, thus acting to improve the ambient air quality of the State of Maine.

E. VOC Testing Approach

Consistent with recent communications between EPA and the wood products industry, permitting a source of VOC emissions on the basis of "as carbon" is no longer an acceptable approach due to the limitations of the existing test methods to accurately quantify the complete range of VOCs from a source. EPA has begun work on their existing methods or to develop a new test method which would improve the accuracy of VOC testing. LP followed the suggested approach for the development of the application for this expansion, permitting all VOC sources on an "as propane plus formaldehyde" basis. However, due to the applicability of BACT and/or LAER for this permit and given that current VOC limits for existing permitted sources were developed on the "as carbon" basis, the LAER limit presented in this permit also was on this same basis, thus providing a consistent basis for comparison. As such, LP must demonstrate compliance with the BACT limit, therefore the stack testing requirement for the CHU-TOS VOC limit will use Method 25 or 25A and remain on an "as carbon" basis.

G. Alternative Siting Analysis

Another aspect of review for any significant Non-Attainment New Source Review project is the need to complete an alternative citing analysis. In the development of this project, LP completed an analysis of both its existing US facilities and the development of a new facility for construction of an OSL production unit. In this analysis, LP evaluated both the size of existing facilities and the availability of raw materials for a new OSL line. It was determined that the New Limerick mill best suited the conditions of minimizing impact on an existing facility and providing sufficient raw materials for this expansion.

H. Hazardous Air Pollutant Limits

The OSL expansion project will result in a net emissions increase in permitted HAP emissions. This change in emissions will increase the permitted HAPs emissions from the recently approved OSB Production Increase license value of 45.36 tons/yr to an estimated 65 tons/yr. This approved change will supersede the limits provided in Amendment #7 of the Part 140 Operating License.

I. Facility Emissions

Total annual emissions for the facility (in tons), after the OSL expansion, are detailed as follows:

	PM	PM_{10}	SO_2	NO_x	CO	VOC[1]	Lead
CHU-TOS Exhaust	20.0	20.0	17.0	154.0	154.0	23.0	4.96E-03
CHU – Dryer Exhaust	68.0	68.0	2.0	144.0	477.0	42.0	5.47E-04
Press	54.0	54.0	7.0	90.0	42.0	10.0	-
Pneumatic System	30.0	30.0	-	-	-	20.0	-
MDI Tanks	-	-	-	-	-	-	-
Emergency Generator	0.1	0.1	0.2	2.4	0.6	0.1	-
Spray Booth	-	-	-	-	-	3.5	-
Emergency Fire Pump	0.1	0.1	0.1	1.3	1.3	0.1	-
Total TPY	**172.0**	**172.0**	**26.0**	**392.0**	**674.0**	**100.0**	**5.5E-03**

1. VOC as propane plus formaldehyde.

III. AMBIENT AIR QUALITY ANALYSIS

A. Overview

A combination of screening and refined modeling was performed to demonstrate that emissions from LP, in conjunction with other area sources, will not cause or contribute to violations of Maine Ambient Air Quality Standards (MAAQS) for SO_2, PM_{10}, NO_2 or CO or to Class II SO_2, PM_{10} and NO_2 increment standards.

Based upon the distance from LP to the nearest Class I area (121 kilometers) and the magnitude of emissions increase, the affected Federal Land Managers (FLMs) and MEDEP-BAQ have determined that an assessment of Class I Air Quality Related Values (AQRVs) is not required.

B. Model Inputs

The ISCST3 model was used in refined simple terrain mode to address standards and increments in all areas while the VALLEY screening mode of the COMPLEX-I model (CI-VM) was used to evaluate impacts in intermediate and complex terrain, i.e., areas where terrain elevations exceed the proposed stack-top elevations. In addition, the SCREEN3 model was used to evaluate impacts in the cavity region for all LP stacks that are less than H + 0.5L (where H is the height of the controlling structure and L is the lesser of the height or maximum projected width of that structure).

All modeling was performed in accordance with all applicable requirements of the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) and the United States Environmental Protection Agency (USEPA).

A valid 5-year hourly meteorological off-site database was used for the refined modeling. The wind data was collected at a height of 10.00 meters at the Caribou National Weather Service station meteorological site during the 5-year period 1985-1989. Missing data were interpolated or coded as missing. Surface data collected at Loring Air Force Base were substituted for missing data. Hourly cloud cover, ceiling height and surface wind speed from Caribou NWS were used to calculate stability. Hourly mixing heights were derived from surface and upper air data collected at Caribou NWS station.

Point-source parameters, used in the modeling for LP and other nearby sources, are listed in Table III-1. The modeling analysis accounted for the potential of building wake effects on emissions from all modeled stacks that are below their respective formula GEP stack heights.

TABLE III-1 : Point Source Stack Parameters

Facility/Stack	Stack Base Elevation (m)	Stack Height (m)	GEP Stack Height (m)	Stack Diameter (m)	UTM Easting NAD27 (km)	UTM Northing NAD27 (km)
CURRENT/PROPOSED						
Louisiana-Pacific						
CHU - TOS Stack	120.00	30.48	54.83	1.83	580.678	5106.452
CHU – Dryer RTO Stack	120.00	30.48	54.96	2.08	580.776	5106.516
Press RCO Stack	120.00	30.48	54.96	1.93	580.903	5106.473
AE Staley						
Main Stack (Boilers)	121.90	27.70	37.34	0.76	586.344	5106.239
Flash Dryer	121.90	18.30	37.34	1.30	586.319	5106.280
CURRENT ACTUALS (BASED ON FUEL USE DATA)						
AE Staley						
Main Stack (Boilers)	121.90	27.70	37.34	0.76	586.344	5106.239
1987 BASELINE						
Louisiana-Pacific						
Thermal Oil Heaters	120.00	30.48	54.83	1.30	580.738	5106.453
Dryers	122.50	30.48	54.83	1.07	580.729	5106.490
AE Staley						
Main Stack (Boilers)	121.90	18.30	37.34	0.76	586.344	5106.239
1977 BASELINE						
Louisiana-Pacific						
All LP sources built after 1977 baseline year, no credit to be taken						
AE Staley						
Main Stack (Boilers)	121.90	7.60	37.34	0.71	586.344	5106.239

Emission parameters for LP and other nearby sources for MAAQS and increment modeling are listed in Table III-2. For the purposes of determining PM_{10} and NO_2 impacts, all PM and NO_x emissions were conservatively assumed to convert to PM_{10} and NO_2, respectively.

TABLE III-2 : Stack Emission Parameters

Facility/Stack	Averaging Periods	SO_2 (g/s)	PM_{10} (g/s)	NO_2 (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
MAXIMUM LICENSE ALLOWED							
Louisiana-Pacific							
Maximum							
CHU - TOS Stack	All	0.48	0.58	4.43	4.43	455.37	23.36
CHU – Dryer RTO Stack	All	0.05	1.97	4.15	9.56	400.93	14.22
Press RCO Stack	All	0.19	1.55	2.58	1.21	344.26	16.51
AE Staley							
Main Stack (Boilers)	All	13.63	0.97	3.25		450.00	16.15
Flash Dryer	All		0.52			319.30	4.30
CURRENT ACTUALS (BASED ON FUEL USE DATA)							
AE Staley							
Main Stack (Boilers)	All	3.81	0.27	0.91		450.00	4.53
BASELINE – 1987							
Louisiana-Pacific							
Thermal Oil Heaters	All			0.33		500.93	5.74
Dryers	All			1.16		383.00	26.40
AE Staley							
Main Stack (Boilers)	All			0.35		450.00	2.35
BASELINE – 1977							
Louisiana-Pacific							
All LP sources built after 1977 baseline year, no credit to be taken							
AE Staley							
Main Stack (Boilers)	All	3.69	0.24			450.00	4.55

Key: Shaded areas = not modeled

C. Single Source Modeling Impacts

ISCST3 refined modeling, using 5 years of off-site meteorological data, and CI-VM screening modeling was performed for 3 LP load cases that represented maximum, typical and minimum operating scenarios.

The model results for LP alone, in both simple and complex terrain, are shown in Tables III-3 and III-4, respectively. Maximum predicted impacts that exceed their respective significance level are indicated in boldface type. No further modeling was required for pollutant/terrain combinations that did not exceed their respective significance levels.

TABLE III-3 : Maximum ISCST3 Simple Terrain Impacts from LP Alone

Pollutant	Averaging Period	Max Impact (μg/m^3)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Significance Level (μg/m^3)
SO_2	3-hour	7.22	582.690	5105.140	201.47	**25**
	24-hour	2.49	582.600	5105.100	193.35	**5**
	Annual	0.26	582.675	5105.142	199.91	**1**
PM_{10}	24-hour	**14.03**	580.990	5106.430	120.00	**5**
	Annual	**1.55**	582.675	5105.145	199.57	**1**
NO_2	Annual	**3.90**	582.675	5105.145	199.57	**1**
CO	1-hour	273.64	580.600	5106.400	121.01	**2000**
	8-hour	112.30	580.800	5106.500	121.73	**500**

TABLE III-4 : Maximum CI-VM Complex Terrain Impacts from LP Alone

Pollutant	Averaging Period	Max Impact (μg/m^3)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Significance Level (μg/m^3)
SO_2	3-hour	6.37	582.690	5105.140	204.21	**25**
	24-hour	1.77	582.690	5105.140	204.21	**5**
	Annual	0.57	582.690	5105.140	204.21	**1**
PM_{10}	24-hour	**11.53**	582.680	5105.140	203.60	**5**
	Annual	**3.69**	582.680	5105.140	203.60	**1**
NO_2	Annual	**9.28**	582.680	5105.140	203.60	**1**
CO	1-hour	158.60	582.680	5105.140	203.60	**2000**
	8-hour	111.02	582.680	5105.140	203.60	**500**

The results of the SCREEN3 cavity modeling are shown in Table III-5. Maximum predicted impacts were obtained by summing the maximum predicted impact from each stack, regardless of receptor location.

TABLE III-5 : Maximum SCREEN3 Cavity Impacts from LP Alone

Pollutant	Averaging Period	Max Impact (μg/m^3)	Class II Significance Level (μg/m^3)
SO_2	3-hour	23.01	**25**
	24-hour	**10.23**	**5**
	Annual	**2.05**	**1**
PM_{10}	24-hour	**33.80**	**5**
	Annual	**6.76**	**1**
NO_2	Annual	**23.86**	**1**
CO	1-hour	360.59	**2000**
	8-hour	252.40	**500**

D. Combined Source Modeling Impacts

Since maximum predicted modeled impacts from LP alone exceeded significance levels, as indicated in boldface type in Tables III-3 and III-4, other sources not explicitly included in the modeling analysis must be accounted for by using representative background concentrations for the area.

Background concentrations, listed in Table III-6, are derived from representative Northern Maine rural background data.

TABLE III-6 : Background Concentrations

Pollutant	Averaging Period	Background Concentration (μg/m³)	Date
SO_2	3-hour	**24**	2003[1]
	24-hour	**13**	
	Annual	**5**	
PM_{10}	24-hour	**32**	2001[1]
	Annual	**10**	1999[1]
NO_2	Annual	**11**	1995[2]

Notes:
[1] Robinson Site, Easton
[2] TLSP site, Cape Elizabeth

MEDEP-BAQ identified other sources whose impacts would potentially be significant in LP's significant impact area. Only one other source was explicitly included in the combined source modeling analysis: AE Staley.

Table III-7 summarizes maximum combined source SO_2, PM_{10}, and NO_2 impacts. The higher of the simple or complex terrain maximum predicted impacts was added to the maximum cavity impact (summed regardless of receptor location, see Table III-5) as well as the conservative background concentrations to demonstrate compliance with MAAQS. All combined source impacts for all pollutant/averaging periods were below their respective MAAQS. Because the predicted impacts using this method meet MAAQS, no further MAAQS modeling for LP needed to be performed.

TABLE III-7 : Maximum Combined Sources Impacts

Pollutant	Averaging Period	Max Impact (μg/m³)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Maximum Cavity Impact (μg/m³)	Back-Ground (μg/m³)	Max Total Impact (μg/m³)	MAAQS (μg/m³)
SO_2	3-hour	**171.06**	589.800	5104.600	182.68	**24.22**	**24**	**219.28**	**1150**
	24-hour	**58.48**	585.800	5105.600	128.25	**10.77**	**13**	**82.25**	**230**
	Annual	**6.75**	582.600	5105.200	184.00	**2.16**	**5**	**13.91**	**57**
PM_{10}	24-hour	**14.22**	580.990	5106.430	120.00	**33.00**	**32**	**79.22**	**150**
	Annual	**3.69**	582.680	5105.140	203.60	**6.60**	**10**	**20.29**	**40**
NO_2	Annual	**9.28**	582.680	5105.140	203.60	**28.62**	**11**	**48.90**	**100**

E. Increment

LP's maximum increment impacts were predicted using the ISCST3 refined model in simple terrain and CI-VM screening model in complex terrain. For addressing increment impacts in intermediate terrain (i.e., terrain above stack top and below plume centerline), the ISCST3 and CI-VM models were run individually, and the higher of the two increment impacts chosen, per EPA Model Clearinghouse guidance Memo #77.

LP sources were conservatively modeled at their maximum licensed allowed emission rates. Since LP was built after 1977 and before 1987, LP could only take credit for emissions sources that existed in the NO_2 baseline year (1987).

Results of the single and combined source Class II increment analyses are shown in Tables III-8 and III-9, respectively. All predicted increment impacts were below all increment standards. Because all predicted increment impacts meet increment standards, no further Class II SO_2, PM_{10} and NO_2 increment modeling needed to be performed.

TABLE III-8 : Class II Increment Consumption – LP Alone

Pollutant	Averaging Period	Max Impact (µg/m^3)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Increment (µg/m^3)
SO_2	3-hour	**6.50**	582.700	5105.200	184.55	**512**
	24-hour	**2.17**	580.700	5106.300	120.70	**91**
	Annual	**0.29**	581.200	5105.700	146.30	**20**
PM_{10}	24-hour	**14.22**	580.990	5106.430	128.02	**30**
	Annual	**1.74**	582.675	5105.145	199.57	**17**
NO_2	Annual	**4.06**	582.675	5105.145	199.57	**25**

TABLE III-9 : Class II Increment Consumption – Combined Source

Pollutant	Averaging Period	Max Impact (µg/m^3)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Increment (µg/m^3)
SO_2	3-hour	**33.57**	582.583	5105.232	159.66	**512**
	24-hour	**5.84**	585.800	5102.600	141.92	**91**
	Annual	**0.57**	582.690	5105.140	204.21	**20**
PM_{10}	24-hour	**14.22**	580.990	5106.430	128.02	**30**
	Annual	**3.69**	582.680	5105.140	203.60	**17**
NO_2	Annual	**7.85**	582.680	5105.140	203.60	**25**

Federal guidance and Chapter 140 of MEDEP regulations require that any major source undergoing a major modification provide additional analyses of impacts that would occur as a direct result of the general, commercial, residential, industrial and mobile-source growth associated with the construction and operation of that source.

GENERAL GROWTH: Very minimal increases in local emissions due to construction related activities are expected to occur, as the proposed modification will involve short-lived general construction. Increases in potential emissions of NO_x due to increased traffic to the mill will be minimal, as there will be a minimal increase in truck traffic in and out of the facility (transporting raw materials, finished product, etc). Fugitive PM emissions (if any) will be minimized by the use of "Best Management Practices".

RESIDENTIAL, COMMERCIAL AND INDUSTRIAL GROWTH: Population growth in the impact area of a proposed source can be used as a surrogate factor for the growth in emissions from combustion sources. Since the population in Aroostook County has declined approximately 15% since the minor source baseline date was established and the modification is expected to create only 40 new full-time jobs, no new significant residential, commercial and industrial growth will follow from the modification associated with this source. In addition, new operations and support personnel required will likely be available from general area surrounding the facility.

MOBILE SOURCE AND AREA SOURCE GROWTH: Since area and mobile sources are considered minor sources of NO_2, their contribution to increment has to be evaluated. Technical guidance from the Environmental Protection Agency points out that screening procedures can be used to determine whether additional detailed analyses of minor source emissions are required. Compiling a minor source inventory may not be required if it can be shown that little or no growth has taken place in the impact area of the proposed source since the baseline date (February 8, 1988) was established. Emissions during the calendar year 1987 are used to determine baseline emissions. As stated previously, the population in Aroostook County has declined approximately 15% since the minor source baseline date was established, therefore, no further assessment of additional area source growth of NO_2 increment is needed.

Any emissions associated with the minimal increases in vehicle miles traveled have been more than offset by decreases in NO_x emissions in terms of reduced average grams-per-vehicle-mile emission rates since the minor source baseline date was established. Therefore, no increase in actual NO_x emissions from mobile sources is expected. No further detailed analyses of mobile NO_2 emissions are needed.

F. Class I Impacts

Based upon the distance from LP to the nearest Class I area (121 kilometers) and the magnitude of emissions increase, the affected Federal Land Managers (FLMs) and MEDEP-BAQ have determined that an assessment of Class I Air Quality Related Values (AQRVs) is not required.

G. Summary

In summary, it has been demonstrated that LP in its proposed configuration will not cause or contribute to a violation of any SO_2, PM_{10}, NO_2 or CO averaging period MAAQS or any SO_2, PM_{10} or NO_2 averaging period Class II increment standards.

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 Air Emission License A-327-77-1-N pursuant to the preconstruction licensing requirements of MEDEP Chapter 115 and subject to the standard and special conditions below.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License 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.

(1) Central Heating Unit

A. LP may install a Central Heating Unit (CHU) (278 MMBtu/hr). [MEDEP Chapter 115]

B. LP is licensed to fire biomass in the CHU. Cleanup residue from the blenders and former infeed conveyors generated during normal plant operations is considered biomass and may also be burned. [MEDEP Chapter 115]

C. The maximum firing rate of biomass in the CHU shall not exceed 768 tons/day on a monthly average (4,350 Btu/lb, 50% moisture equivalent). Compliance shall be demonstrated by monitoring and recording the fuel feed to the unit. [MEDEP Chapter 115 BACT]

D. The CHU may be equipped with an emergency vent that may only be used in the event of an equipment malfunction. Use of the emergency vent for startup or shutdown operations is prohibited. [MEDEP Chapter 115 and 40 CFR Part 60]

E. Within 60 days after achieving the maximum production rate at which the CHU will be operated, but no later than 180 days after initial startup of the unit, LP shall perform initial performance testing for PM and opacity in accordance with 40 CFR Part 60, Appendix A. [MEDEP Chapter 115 and 40 CFR Part 60]

(2) Central Heating Unit – Thermal Oil System (CHU-TOS) Stack

A. Particulate matter (PM, PM_{10}) emissions from the CHU-TOS Stack shall be controlled by the operation and maintenance of a centrifugal cyclone separator followed by an electrostatic precipitator (ESP).
LP shall operate, at a minimum, the number of ESP chambers and number of fields per chamber that operated during the most recent demonstration of compliance with the licensed particulate emission limits. Data for the following points in the ESP shall be recorded once per shift during operation:

1) Secondary voltages on each field
2) Primary current on each field
3) Secondary current on each field

[MEDEP Chapter 115 BACT]

Upon written notification to the Department, and in accordance with the Bureau of Air Quality's Air Emission Compliance Test Protocol, LP may perform additional particulate emission testing to demonstrate compliance with alternative operating scenarios, but under no circumstances shall LP be relieved of its obligation to meet its licensed emission limits.
[MEDEP Chapter 115 BACT]

B. Emissions from the CHU-TOS Stack shall not exceed the following:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.030	40 CFR Part 60, Subpart Db
PM_{10}	0.030	MEDEP Chapter 115, BACT
NO_X	0.23	MEDEP, Chapter 115, BACT

Pollutant	ppm	Origin and Authority
NO_X	200 ppm_{dv} corrected to 7% O_2 based on an F factor of 9,600 dscf/MMBtu and 7% excess O_2	MEDEP Chapter 117
CO	400 ppm_{dv} corrected to 7%O_2	40 CFR Part 63, Subpart DDDDD

Pollutant	lb/hr	Origin and Authority
PM	4.6	MEDEP, Chapter 115, BACT
PM_{10}	4.6	MEDEP, Chapter 115, BACT
SO_2	3.8	MEDEP, Chapter 115, BACT
NO_X	35.2	MEDEP, Chapter 115, BACT
CO	35.2	MEDEP, Chapter 115, BACT
VOC	5.3	MEDEP, LAER

C. The compliance method for the above emission limit shall be as follows:

Pollutant	Unit of the Standard	Compliance Method
PM	lb/MMBtu	40 CFR Part 60, Appendix A, Method 5
PM_{10}	lb/MMBtu	40 CFR Part 60, Appendix A, Method 5 or Method 201/201A 40 CFR Part 51, Appendix M
NO_X	lb/MMBtu	40 CFR Part 60, Appendix A
NO_X	ppm	CEM
NO_X	lb/hr	40 CFR Part 60, Appendix A
SO_2	lb/hr	40 CFR Part 60, Appendix A
VOC	lb/hr	40 CFR Part 60, Appendix A Method 25 or 25A
CO	lb/hr	40 CFR Part 60, Appendix A
CO	ppm	CEM

D. The CHU-TOS Stack height shall have a minimum stack height of 100 feet above ground level. [MEDEP Chapter 115]

E. New Source Performance Standards [40 CFR Part 60]

1. The CHU-TOS Stack is subject to 40 CFR Part 60, Subparts A and Db. LP shall provide notifications, maintain records, and submit reports as required by the subpart or approved alternatives.

2. Within 60 days after achieving the maximum production rate at which the CHU will be operated, but no later than 180 days after initial startup of the unit, LP shall perform initial performance testing for PM and opacity in accordance with 40 CFR Part 60, Appendix A.

3. 40 CFR Part 60 Subpart Db requires maintaining records of the amount of fuels combusted each day and calculation of annual capacity factor for each calendar quarter. This requirement was directed toward multi-fuel boilers to determine the annual capacity firing fossil fuel. EPA Region I determined this requirement is not meant to apply to 100% wood fired

systems. However, LP shall maintain monthly fuel use records and determine an annual capacity factor on a 12-month rolling average basis with the new annual capacity calculated at the end of each month and submitted annually, unless an alternative monitoring approach is approved by the administrator.

4. Visible emissions from the CHU-TOS Stack shall not exceed 20% opacity on a 6-minute average except for one 6-minute period per hour of not more than 27% opacity. This opacity standard shall apply at all times, except during periods of startup, shutdown, and malfunction.

5. Compliance with the opacity limit for the CHU-TOS Stack shall be demonstrated by means of a continuous opacity monitoring system (COM). The COMs must be installed prior to CHU start-up and subsequently operated, certified, and maintained in accordance with 40 CFR Part 60.

F. National Emission Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 63]

1. The CHU-TOS Stack is subject to 40 CFR Part 63, Subparts A and DDDDD. LP shall provide notifications, maintain records, and submit reports as required by the subpart or approved alternatives.

2. Fuel analyses shall be conducted per 40 CFR Part 63.7521 or an approved alternative. A site specific fuel analysis plan must be submitted 60 days prior to the intended compliance demonstration.

G. Emission Limit Compliance Demonstration

1. LP shall conduct particulate matter (PM) emission testing in accordance with 40 CFR Part 60, Appendix A, Method 5, and demonstrate compliance, once every other year on the CHU-TOS Stack, unless otherwise directed by the Department. [MEDEP Chapter 115]

2. Compliance with the NO_x ppm limit shall be based on a 30-day rolling average per condition 2B and demonstrated by means of a NO_x CEMs on the CHU-TOS Stack. [MEDEP Chapter 117]

3. The NO_x CEM shall be installed prior to CHU start-up and subsequently operated and maintained in accordance with Chapter 117. The CEM shall meet the monitoring requirements of 40 CFR Part 60.13 as well as 40 CFR Part 60, Appendices B and F. [MEDEP Chapters 117]

4. LP shall maintain a CO concentration below 400 ppm_{dv} corrected to 7%O_2 (30-day rolling average) demonstrated by means of a CO CEMs on the CHU-TOS Stack. This limit applies at all times except periods of startup, shutdown, and malfunction or if the unit is operating at less than 50 percent rated capacity. [40 CFR Part 63]

5. The CO CEM shall be installed prior to CHU start-up and subsequently operated and maintained in accordance with 40 CFR Part 63. The CEM shall meet the monitoring requirements of 40 CFR Part 60.13 as well as 40 CFR 63.7525(a). [MEDEP Chapter 117 and 40 CFR Part 63]
6. LP shall conduct carbon monoxide (CO) emission testing in accordance with 40 CFR Part 60, Appendix A to demonstrate compliance one time in the first year of operation and upon request thereafter for the CHU-TOS Stack. [MEDEP Chapter 115 BACT]
7. LP shall conduct VOC emission testing to demonstrate compliance one time in the first year of operation and upon request thereafter for the CHU-TOS Stack. VOC testing shall be conducted according to 40 CFR Part 60, Appendix A, Method 25 or 25A. [MEDEP Chapter 115 LAER]
8. Compliance with the total selected metals (TSM) limit for the CHU-TOS Stack, shall be demonstrated via fuel analysis using DEP and EPA approved methodologies. As LP has successfully completed a health based compliance alternative (HBCA) demonstration for Manganese, compliance with the TSM limit need only be based on the following metals: arsenic, beryllium, cadmium, chromium, lead, nickel, and selenium. [40 CFR Part 63, Subpart DDDDD]
9. Compliance with the HCl limit for the CHU-TOS Stack, may be demonstrated via a HBCA demonstration. [40 CFR Part 63, Subpart DDDDD]

(The previous condition will replace Condition 14 of Part 70 Air Emission License A-327-70-H-A upon incorporation of this NSR permit.)

(3) Central Heating Unit – Dryer Vent Stack

Emissions from the Dryer Vent RTO (Stack #2) shall not exceed the following limits:

Pollutant	gr/dscf	Origin and Authority
PM	0.015	MEDEP, Chapter 115, BACT

Pollutant	lb/hr	Origin and Authority
PM	15.6	MEDEP, Chapter 115, BACT
PM_{10}	15.6	MEDEP, Chapter 115, BACT
SO_2	0.43	MEDEP, Chapter 115, BACT
NO_X	32.9	MEDEP, Chapter 115, BACT
CO	109.0	MEDEP, Chapter 115, BACT
VOC	5.6	MEDEP, Chapter 115, LAER

(The previous condition will replace Condition 15(E) of Part 70 Air Emission License A-327-70-H-A upon incorporation of this NSR permit.)

(4) Diesel-Fired Emergency Generator

A. The diesel-fired emergency generator shall be limited to 500 hours of operation per year, firing 0.05% sulfur (documented through supplier fuel records) diesel fuel, based on a 12 month rolling total. Hours of operation shall be kept by an hour meter on the generator. Fuel purchase receipts indicating percent sulfur by weight shall be kept as well. [MEDEP Chapter 115 BACT]

B. Visible emissions shall not exceed an opacity of 20 percent on a six (6) minute block average basis, for more than two (2) six (6) minute block averages in a 3-hour period. [MEDEP Chapter 101, Section 2(B)(1)(d)]

(5) For all CEMS and COMS recordkeeping shall include:

A. Documentation that all CEMS and COMS are continuously accurate, reliable and operated in accordance with Chapter 117, 40 CFR Part 51, Appendix P, and 40 CFR Part 60, Appendices B and F;

B. Records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each CEMS and COMS as required by 40 CFR Part 51 Appendix P;

C. A report of other data indicative of compliance with the applicable emission standards for those periods when the CEMS or COMS were not in operation or produced invalid data. In the event the Department does not concur with the licensee's compliance determination, the licensee shall, upon the Department's request, provide additional data, and shall have the burden of demonstrating that the data is indicative of compliance with the applicable standard.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:____
DAVID P. LITTELL, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 29, 2006
Date of application acceptance: June 29, 2006

Date filed with the Board of Environmental Protection: __________________________

This Order prepared by Mark Roberts, Bureau of Air Quality.