



DEPARTMENT ORDER

**S.D. Warren Company
Somerset County
Skowhegan, Maine
A-19-77-10-A**

**Departmental
Findings of Fact and Order
New Source Review
NSR #10**

FINDINGS OF FACT

After review of the New Source Review 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	S.D. Warren Company (SDW)
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	322121
NATURE OF BUSINESS	Pulp & Paper Mill
FACILITY LOCATION	1329 Waterville Road, U.S. Route 201, Skowhegan, Maine

B. NSR License Description

SDW has requested a New Source Review (NSR) license to address an upgrade to SDW's Woodyard operation, which includes the installation of a new drum debarker and a wood chipper which will be housed in a new building. Since the new drum debarker may potentially increase steam use, and potentially create an increase in air emissions, these possibilities are addressed in this NSR.

C. Emission Equipment

The following equipment is addressed in this NSR license. The project will involve replacing the drum debarker, the chipper and certain woodyard woodchip conveyors. The drum debarker, the chipper and associated equipment (grapples, cranes, conveyor belts, metal detectors, etc.) will be housed within a new building. The new building shall have a new stack dedicated to the new dust cyclone separator.

All of the equipment to be replaced is considered to be categorically exempt insignificant activities pursuant to *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115, Appendix B. Impacts on steam demand from existing Power Boilers #1 and #2 are uncertain. Therefore for purposes of this application, SDW estimated future actual emission increases from the Power Boilers due to the woodyard project under the maximum foreseeable increase in steam demand.

D. 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 SDW does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The application submitted by SDW seeks a license amendment for replacement of woodyard equipment that was installed when the mill was originally constructed and that currently qualifies as categorically insignificant activities pursuant to 06-096 C.M.R. 115, Appendix B. Unlike the existing drum debarkers, the new debarker will be equipped with a cyclone separator to control particulate matter emissions. In addition, the new chipper will continue to be electrically powered. Additionally, improvements to the woodchip conveying systems are expected to decrease fugitive particulate matter emissions. Therefore, the new equipment will continue to qualify as categorically exempt insignificant activities. While the project involves installation of equipment projected to improve the efficiency of steam use, SDW remains uncertain regarding the potential increased steam demand. Therefore, SDW estimated maximum future-actual-increases from Power Boiler #1 and Power Boiler #2 based on the maximum steam demand increase scenario.

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 C.M.R. ch. 100.

Emissions increases from Power Boiler #1 and Power Boiler #2 for each regulated pollutant were determined using an actual-to-projected-actual comparison, subtracting the annual baseline actual emissions of the representative 24 months preceding the modification from the annual projected actual emissions. The results of this comparison are as follows:

<u>Pollutant</u>	<u>Baseline Actual Emissions 2007-2008 (ton/year)</u>	<u>Projected Actual Emissions (ton/year)</u>	<u>Net Emissions Increase (ton/year)</u>	<u>Significant Emissions Increase Levels (ton/year)</u>
PM	224.8	153.7	-71.1	25
PM ₁₀	302.9	190.8	-112.1	15
PM _{2.5}	225.0	134.2	-90.9	10
SO ₂	1172.6	749.7	-422.9	40
NO _x	1527.1	1027.0	-500.1	40
CO	834.4	789.4	-45.0	100
VOC	13.7	8.8	-4.9	40
CO ₂ e	-	-	<75,000	75,000

Note: The above values are for Power Boiler #1 and Power Boiler #2 only. Emissions from the wood yard upgrade are not reliably quantifiable. However, based on the design improvements, emissions are not expected to increase from the existing woodyard emissions. PM₁₀ and PM_{2.5} totals include PM condensables.

Baseline Actual Emissions

For an existing emissions unit, baseline actual emissions are the average rate, in tons per year, at which the unit actually emitted a pollutant during any consecutive 24-month period within the 10-year period immediately preceding the date a complete application is received by the Department for a license required under 06-096 C.M.R. ch. 115 and can be selected on a pollutant-by-pollutant basis. SDW has selected calendar years 2007-2008 for the baseline actual emissions from Power Boiler #1 and Power Boiler #2.

Projected Actual Emissions

Power Boiler #1 and Power Boiler #2 are not being physically modified as a result of the woodyard equipment replacement project, and their individual short term emission rates will not increase as a result of the requested NSR license. Each Power Boiler is already permitted to operate at the potential increased rates needed to supply additional steam to the new woodyard during colder weather.

Since the requested project does not involve increases to the potential-to-emit (PTE) or design capacity of the Power Boilers, projected actual emissions are the maximum annual emissions anticipated to occur in the 5-year period following completion of the proposed project, in accordance with the definition of "projected actual emissions" as specified in 06-096 CMR ch. 100 § 141 and 40 Code of Federal Regulations (C.F.R.) § 52.21 (b) (41). Projected actual emissions for the two boilers are estimated based on a vendor estimated maximum

additional steam demand during colder weather when steam is supplied to the woodyard. The additional steam demand equates to approximately 24,000 lbs/steam per hour for four months of the year.

There are no net emissions increases expected because of this project. Therefore, this NSR license has been processed as a minor modification under *Minor and Major Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 since the changes being made are not addressed or prohibited in the Part 70 air emission license. 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 the requested operation.

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. Woodyard Process Emissions

1. Project Description

The purpose of the Somerset Woodyard Upgrade Project is to improve woodyard reliability, reduce wood losses and provide the capacity to produce all of the mill's wood chips, thus eliminating the need to purchase wood chips. The project will increase chip production capacity by approximately 25% and may increase boiler steam demand due to an increase in steam used for deicing. This project will not affect the amount of wood chips used at SDW. The project will replace the three existing drum debarkers installed in 1975-76 with a single drum debarker approximately 18.5 feet in diameter by 125 feet long. Like the existing drum debarkers, the new drum debarker will be equipped with a steam injection system for deicing. The new drum debarker will also be equipped with a dust control system. The existing debarkers are not equipped with a dust control system. This new debarker is designed to process full length logs. The three original debarking drums that process 8

foot logs will eventually be scrapped. The existing wood chipper will also be replaced with a 2000 hp horizontal electric powered chipper. The existing chipper will be removed from service. A new chip belt conveying system will be installed reducing the need to pneumatically convey woodchips to the outside chip pile storage area. The drum debarker, the chipper and associated equipment (grapples, cranes, conveyor belts, metal detectors, etc.) will be housed within a new building located south of the existing saw deck. Although the installation of the building foundation is scheduled for the spring of 2017 and the project start up is scheduled for late November 2017, pilings and concrete mass pads are scheduled to be installed in mid-November 2016.

There will be no fuel burning equipment associated with the project. More bark will be generated as a result of the project but there will be an even larger reduction in wood loss, producing a net reduction in biomass sent to the boilers from the woodroom. This net reduction in biomass will likely be made up with lower cost fuels, primarily natural gas, resulting in a reduction in emissions from the power boilers. In addition, approximately 75% of the woodchips will be conveyed using a new conveying system associated with this project which will result in chips being conveyed directly to the mill instead of being pneumatically blown and stocked piled in the woodyard. The new conveying system will result in less chip handling, less fines and less energy being used to process the chip. Significant energy demand savings are expected from the addition of the conveyor system.

Emissions of PM from the debarking operation, and naturally occurring Volatile Organic Compounds (VOCs) from the wood being processed, are addressed below. The new wood chipper and debarker will continue to be considered insignificant activities under the Department's air licensing regulations.

2. Regulatory Requirements

a. Particulate Matter (PM)

Unlike the existing drum debarkers, the new debarker will be equipped with a cyclone separator to control PM generated by the debarking process.

SDW proposes that the cyclone separator on the debarker constitutes BACT. SDW reviewed the EPA RACT/BACT/LAER Clearinghouse (RBLC) database for technologies used to control PM from buildings that process wood products.

The three BACT technologies found were:

- i) Vent dust generated from equipment inside a closed building
- ii) Use a cyclone separator to remove particle matter
- iii) Use a baghouse filter

The particle size from a debarking operation is expected to be relatively large; thus, the removal efficiency for a cyclone separator is expected to be very similar to a baghouse filter. A baghouse filter would be more expensive in terms of capital cost. Operating and maintenance costs for a baghouse filter would also be much more expensive than a cyclone separator. During winter operation when steam is being used to deice the logs, the baghouse filter would be prone to fouling with wet PM. Therefore, SDW has proposed a cyclone separator as BACT for this application.

Fugitive PM emissions will also be reduced as a result of this project. Currently all the chips processed through the chipper are blown outside onto one of the chip piles producing fugitive dust. The chips are reclaimed by a bulldozer pushing the chips back into a conveyor system that feeds the chip screens. With this project a new conveyor belt will be installed that will convey an average of approximately 75% of the chips from the chipper directly to the chip screens, thus reducing the need to blow these chips out onto the storage piles, which will in turn reduce fugitive dust emissions. Conveying the wood chips on a belt versus blowing chips will also reduce energy demand for the wooyard operation. For these reasons, SDW expects that the wooyard project will reduce fugitive PM emissions compared to the existing woodroom.

b. VOCs

A review of AP-42 data did not reveal any data on VOC emissions from debarking logs. The lack of data would suggest drum debarking is an insignificant source of VOC. Logs are typically cut and placed in storage some time before they reach the debarking drum. Logs are only in the drum for approximately 30 minutes. It is unlikely there would be a significant release of VOCs in this time frame. With regard to the use of steam to deice the logs, steam is only used when ice and snow are on the logs. The steam's function is only to melt the ice and snow on the surface of the logs and not to heat up the wood. Debarking is listed as a categorical insignificant emissions source in Appendix B of 06-096 C.M.R. ch. 115. Based on the above, SDW concluded that VOC emissions from the wooyard will not increase as a result of the project.

SDW's review of AP-42 and RBLC clearinghouse did not identify any data on VOC emissions from debarking of logs nor that any emissions controls for VOCs from this process. Therefore, SDW proposed BACT for VOC from the debarker be met by its proper operation and maintenance.

3. Department Determination

The Department has determined that BACT for PM emissions from the debarker is the operation of the cyclone separator with a visible emission limit which shall not exceed an opacity of 20 percent on a six (6) minute block average basis.

The Department has determined that BACT for VOC emissions is no additional control.

C. NSR Future Project Emissions Reporting

As shown by the baseline actual-to-projected actual comparisons table above, the proposed project does not result in a significant emissions increase for any Prevention of Signification Deterioration (PSD) regulated pollutants. Since the anticipated emissions increase (worst-case) associated with the project will not exceed 50% of the PSD significance levels, the project is deemed not to have a "reasonable possibility" of resulting in a significant emissions increase; thus, pre and post project recordkeeping and reporting requirements do not apply. SDW is not required to track future actual emissions from this project [40 C.F.R. Part 52 § 52.21(r)(6)].

D. Compliance Assurance Monitoring (CAM)

Federal Regulation, *Compliance Assurance Monitoring*, 40 CFR Part 64, is applicable to units at major sources if the unit has emission limits, a control device to meet the limits, and pre-control emissions greater than 100 tons/year for any pollutant. The woodyard process is not subject to specific emission limits and therefore is not subject to 40 C.F.R. Part 64.

E. Incorporation Into the Part 70 Air Emission License

The requirements in this 06-096 C.M.R. ch. 115 New Source Review license shall apply to the facility upon issuance. 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.

F. Annual Emissions

The proposed woodyard project will not change the licensed annual emissions from the facility.

III. Ambient Air Quality Analysis

S.D. Warren previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. This project does not result in an emissions increase for any criteria pollutants, and no new emissions limits are proposed for this project. A summary of that analysis is included in air emissions license A-19-77-2-A dated June 2, 2008. Therefore, an additional ambient air quality analysis is not required for this amendment.

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-19-77-10-A pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific conditions below.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

- (1) SDW shall operate the debarker exhaust system cyclone separator when the new debarker is in operation.
- (2) Visible emissions from the debarker exhaust system cyclone separator shall not exceed an opacity of 20 percent on a six (6) minute block average basis.
- (3) SDW shall submit an application to incorporate this NSR license 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 10 DAY OF November, 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Paul Mercer*
PAUL MERCER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 9/26/2016
Date of application acceptance: 9/26/2016

Date filed with the Board of Environmental Protection:

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

