



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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Verso Androscoggin LLC
Franklin County
Jay, Maine
A-203-77-19-A

Departmental
Findings of Fact and Order
New Source Review
NSR #19

FINDINGS OF FACT

After review of the air emissions license 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 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Verso Androscoggin LLC
LICENSE TYPE	06-096 CMR 115, Minor Modification
NAICS CODES	322121
NATURE OF BUSINESS	Pulp & Paper Mill
FACILITY LOCATION	Riley Road, Jay, Maine

Verso Androscoggin LLC (referred to in this license as Verso Androscoggin, The Androscoggin Mill, or The Mill) is an integrated pulp and paper manufacturing facility in Jay, Maine owned by Verso Paper Corporation. Operations at the Mill include a full range of manufacturing and supporting activities to produce a wide variety of pulp and paper products. The Androscoggin Mill produces both bleached Kraft pulp from a chemical pulping process and groundwood pulp from a mechanical pulping process.

The Androscoggin Mill is an existing stationary source currently operating under Part 70 License A-203-70-A-I and is considered a Part 70 major source, as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). The Mill has the potential to emit more than 100 tons per year (TPY) of particulate matter (PM), particulate matter under 10 micrometers (PM₁₀), particulate matter under 2.5 micrometers (PM_{2.5}), sulfur dioxide (SO₂), nitrogen oxides (NO_x), and carbon monoxide (CO); more than 50 TPY of volatile organic compounds (VOC); and more than 100,000 TPY of carbon dioxide equivalent (CO₂e); therefore, the source is a major source for criteria pollutants. Verso Androscoggin has the potential to emit more than 10 TPY of a single hazardous air pollutant (HAP) or

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more than 25 TPY of combined HAP; therefore, the source is a major source for HAP.

B. Amendment Description

Verso Androscoggin has submitted an application to license modifications of the No. 2 Paper Machine to improve reliability and performance, referred to as the No. 2 Paper Machine Upgrades Project. The No. 2 Paper Machine produces coated papers. The planned modifications to the No. 2 Paper Machine include the following:

- Installation of a new dilution headbox;
- Installation of new primary and secondary thick stock screens;
- Installation of a new dilution pump and screen;
- Upgrade of the secondary fan pump to variable frequency drive (VFD);
- Modification of ancillary system piping and controls;
- Upgrade of the machine chest pump to VFD;
- Upgrade of the Motor Control Center (MCC) to allow for new electrical equipment; and
- Addition of ancillary supporting equipment.

Additional equipment or modifications not specifically listed above but that achieve the same goals may be installed as part of this project. Improving the reliability and performance of the No. 2 Paper Machine is expected to result in more continuous operation of this unit and a more consistent product. The expected increase in pulp converted to paper on the No. 2 Paper Machine will correspond with a decrease in pulp dried on another paper machine; therefore, there will be no increase in pulp demand as a result of this project. With the proposed upgrades, Verso Androscoggin could achieve an increase in its actual production of air-dried tons of finished paper per year. The Mill plans to install initial support piping and equipment related to the No. 2 Paper Machine upgrades during the spring 2013 outage, to continue with project installation activities during the 3rd and 4th quarters of 2013, and to continue the project with additional installations in 2014.

C. Emission Equipment

The following equipment is addressed in this NSR air emission license:

<u>Equipment</u>	<u>Production Rate</u>	<u>Pollution Control Equipment</u>
No. 2 Paper Machine (A2)	420 ADTFP/day	none

ADTFP = air dried tons of finished product

D. Application Classification

The application to license the No. 2 Paper Machine upgrades does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements. This application includes a Best Available Control Technology (BACT) analysis performed per New Source Review (NSR) requirements.

A modification is identified as major or minor based on whether or not projected net emissions increases exceed the "Significant Emission Increase" levels as given in *Definitions Regulation*, 06-096 CMR 100 (as amended). Net emission increases for each regulated pollutant were determined by using an actual-to-projected-actual comparison, subtracting the annual baseline actual emissions of a representative 24 months preceding the modification from the annual projected actual emissions. Regulated pollutants emitted from the No. 2 Paper Machine include PM, PM₁₀, PM_{2.5}, and VOC.

The baseline actual emissions are equal to the actual emissions from any period of 24-consecutive months within the 10 years prior to submittal of a complete license application and which is representative of normal operation, per 06-096 CMR 100(1)(B). Verso Androscoggin has selected calendar years 2010 and 2011 as the 24-month baseline period. This selected baseline period is representative of typical Mill operations given the consistent operation of the No. 2 Paper Machine over an extended period of time. Baseline emissions were calculated using actual production data and the most recent version of emission factors from National Council for Air and Stream Improvement (NCASI) Technical Bulletins for paper machines.

For projects such as Verso Androscoggin's No. 2 Paper Machine Upgrades Project which do not involve increases to a unit's potential to emit (PTE) or its design capacity, projected actual emissions are the maximum annual emissions anticipated to occur in the five year period following completion of the proposed project. To conservatively estimate projected actual emissions, calculations were based on the maximum finished material process rate for the No. 2 Paper Machine, 420 ADTFP per day, for 365 days per year, corresponding to 153,300 ADTFP per year. NCASI emission factors were multiplied by the projected future production of 153,300 ADTFP/year to obtain the projected emissions values.

PM₁₀ and PM_{2.5} factors each consists of the filterable fraction plus the condensable fraction.

The results of the baseline-actual-to-projected-actual comparisons are as follows:

Pollutant	Annual Baseline Actual Emissions 1/2010 – 12/2011 (tons/year)	Annual Projected Actual Emissions (tons/year)	Net Change (ton/year)	Significance Level (tons/year)
PM	2.81	3.07	0.25	25
PM ₁₀	5.58	6.08	0.50	15
PM _{2.5}	5.14	5.60	0.46	10
VOC	4.85	5.29	0.44	40

Note: The above numbers are for the No. 2 Paper Machine only. None of the other equipment at the facility is affected by this NSR license.

Based on the above comparison, the modification to the facility addressed in this NSR license is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations* 06-096 CMR 115 (as amended), since the changes being made are not addressed or prohibited in the Part 70 air emission license.

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 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment and 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 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Process Description

Before presenting a summary of applicable determinations and other standards and requirements which apply to this modification, a general process description of equipment relevant to this project is presented here.

Verso Androscoggin is an integrated pulp and paper manufacturing facility. The pulp manufactured in the Pulp Mill portion of the facility is used to make a wide variety of pulp and paper products. The Paper Mill at Verso Androscoggin's Jay facility consists of all equipment and operations required to convert pulp to paper or to dried pulp, including stock preparation, additive preparation, coating preparation, starch handling, product finishing and storage, and five paper machines. Pulp is dried on the No. 1 Paper Machine and is either stored on-site

for use at a later a time or sold as pulp. Various grades and weights of paper are produced on each of the other four paper machines.

C. No. 2 Paper Machine

1. New Source Performance Standards (NSPS), 40 CFR Part 60

Federal regulations under 40 CFR Part 60 include New Source Performance Standards (NSPS) for specific sources. The regulation 40 CFR Part 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills*, applies to the Verso Androscoggin Kraft pulp mill. However, the No. 2 Paper Machine does not qualify as an affected facility under this Subpart. Therefore, the No. 2 Paper Machine Upgrades Project does not trigger NSPS requirements. [40 CFR Part 60, Subpart BB, §60.280]

2. National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63

40 CFR Part 63, Subpart S

Pursuant to the Clean Air Act Amendments (CAAA) of 1990, the Verso Androscoggin mill is subject to 40 CFR Part 63, Subpart S, *National Emission Standards for Hazardous Air Pollutants for the Pulp and Paper Industry*. However, this Subpart includes no requirements for the No. 2 Paper Machine. [40 CFR Part 63, Subpart S, §63.440]

40 CFR Part 63, Subpart MM

The Verso Androscoggin mill is subject to 40 CFR Part 63, Subpart MM, *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*. However, this Subpart includes no requirements applicable to the No. 2 Paper Machine. [40 CFR Part 63, Subpart MM, §63.860]

40 CFR Part 63, Subpart JJJJ

Federal regulation 40 CFR Part 63, Subpart JJJJ, *National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating*, applies to facilities that perform paper and other web coating operations. The Androscoggin Mill performs coating operations on the No. 2 Paper Machine. However, the coating is part of the sheet formation and on-machine operations. Pursuant to a letter dated November 19, 2003, from the U.S. EPA to Timothy Hunt of the American Forest and Paper Association (AF&PA), both size presses and on-machine coaters that function as part of the in-line papermaking system used to form the paper substrate are not subject to the MACT [40 CFR Part 63] Subpart JJJJ requirements. Therefore, Subpart JJJJ does not apply to the No. 2 Paper Machine coating operations.

3. NSR Future Project Emissions Reporting

As shown by the baseline-actual-to-projected-actual comparisons table above, the emissions increases for PM, PM₁₀, PM_{2.5}, and VOC from this project are less than 5% of the Prevention of Significant Deterioration (PSD) significance levels. Since this calculation indicates the anticipated emissions increase associated with the No. 2 Paper Machine upgrades will not exceed 50% of the PSD significance levels, the project is deemed to *not* have a “reasonable possibility” of resulting in a significant net emissions increase; thus, pre- and post-project recordkeeping and reporting requirements do not apply. Verso Androscoggin is not required to track future actual emissions from this project. [40 CFR Part 52, §52.21(r)(6)]

4. Compliance Assurance Monitoring (CAM)

The No. 2 Paper Machine is not subject to Compliance Assurance Monitoring (CAM) requirements of 40 CFR Part 64. To be subject to CAM requirements, an individual emission unit must satisfy all of the applicability requirements specified in §64.2. The No. 2 Paper Machine does *not* satisfy two of the applicability requirements: It does not have an emission limit or standard for an applicable pollutant; and it does not use a control device to achieve compliance with a limit or standard. Thus, CAM requirements do not apply to the No. 2 Paper Machine. [40 CFR Part 64, §64.2]

5. Paper Coating Regulation (06-096 CMR 123)

Requirements of 06-096 CMR 123, *Paper Coating Regulation*, apply to roll, knife, meyer rod, or rotogravure coater(s) and drying oven(s) of paper coating lines at stationary sources of VOC emissions. This regulation does not apply to size presses and on-machine coaters on papermaking machines that apply sizing or water-based clays. Since the No. 2 Paper Machine coating system is an on-machine coater, the requirements of this regulation do not apply. [06-096 CMR 123 (1)(C)(1)]

6. Reasonably Available Control Technology (RACT) (06-096 CMR 134)

The chapter of Maine’s rules entitled *Reasonably Available Control Technology for Facilities that Emit Volatile Organic Compounds (VOC-RACT)*, 06-096 CMR 134, exempts certain VOC-emitting equipment from the requirements contained therein. These listed exemptions include “paper machine area emissions which include paper machines and the finishing and converting areas.” The proposed No. 2 Paper Machine upgrades will not trigger requirements of this rule. [06-096 CMR 134, Section 1(C)(7)]

7. Best Available Control Technology (BACT)

The BACT analysis for the No. 2 Paper Machine upgrades was conducted according to a “top-down” approach, according to the following steps:

- Identification of available control technologies.
- Elimination of technically infeasible options.
- Ranking of remaining control technologies by effectiveness.
- Evaluation of economic, environmental, and energy impacts of technically feasible control technologies.
- Identification of BACT.

The analysis of available control technologies included review of the U.S. EPA’s RACT/BACT/LAER Clearinghouse (RBLC) database for BACT determinations made within the last 10 years for paper machines similar to the No. 2 Paper Machine. The following is a summary of the BACT determination for the No. 2 Paper Machine upgrades, by pollutant.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

The paper making process requires large amounts of air, which is primarily discharged from three locations on the paper machine: the former/wet end, the drying section, and the dry end. The amount of particulate matter released in the paper making process is inversely proportional to the moisture content of the web and is thus highest at the dry end of the process.

Potential add-on controls for particulate matter emissions from a paper machine include the use of fabric filters/baghouse, an electrostatic precipitator (ESP), and a Venturi scrubber. Fabric filters and ESPs are technically infeasible as control options for the No. 2 Paper Machine because of the moisture content inherent in paper machine exhaust. For fabric filters or baghouses, the presence of water in the exhaust stream adversely affects the performance of the filtering media. The effectiveness, performance, and power consumption of an ESP are directly dependent upon the electrical conductivity of the particles. Moisture in the exhaust stream can compromise the effectiveness and cause corrosion of components of the control device. The RBLC identified neither fabric filter systems nor ESPs employed for control of particulate emissions from papermaking sources.

A wet scrubber is a technically feasible control option, but for Verso Androscoggin’s No. 2 Paper Machine, the emission rate of particulate matter from the unit does not justify the application of add-on controls. This option is not economically feasible and shall no longer be considered.

The Mill has proposed and the Department finds that good operating practices, including operating and maintaining the unit in accordance with manufacturer's recommendations, as BACT for control of PM, PM₁₀, and PM_{2.5} emissions from the No. 2 Paper Machine. Since this BACT for particulate emissions does not modify the current operations through installation and operation of a control device, a BACT emission limit for PM, PM₁₀, and PM_{2.5} from the No. 2 Paper Machine is not warranted.

b. Volatile Organic Compounds (VOC)

Emissions of VOCs from the No. 2 Paper Machine come from the addition of VOC-containing chemical additives which are added to the pulp slurry at the wet-end of the paper machine and from methanol carryover in the paper machine whitewater. VOC emissions are also generated through the use of VOC-containing solvents used to clean the wire fabric that supports the paper stock on the paper machine. Carbon adsorption and thermal oxidation were considered as potentially feasible options for VOC emissions control from this unit.

Particulate matter in the exhaust stream would adversely affect the adsorption of VOC from the process onto an activated carbon bed due to fouling/clogging of the activated carbon. A recuperative oxidizer and a regenerative thermal oxidizer are both technically feasible VOC control options for the dry end emission points of the paper machine and roof vents but not for the wet end emission points. The RBLC search did not identify the use of either carbon adsorption or thermal oxidation as BACT for the control of VOC emissions from a paper machine. Given the inherently low VOC emission rate from the No. 2 Paper Machine, these add-on controls were not justified as economically feasible for the proposed project.

The Department finds that BACT for VOC emissions from the No. 2 Paper Machine is good operating practices, including operating and maintaining the unit in accordance with manufacturer's recommendations. Since this BACT for VOC emissions does not modify the current operations through installation and operation of a control device, a BACT emission limit for VOC emissions from the No. 2 Paper Machine is not warranted.

D. Annual Emissions

The proposed changes comprising the No. 2 Paper Machine Upgrades Project will result in no changes to any of the annual emission limits currently contained in Verso Androscoggin's Air Emission Licenses, including all amendments.

III. AMBIENT AIR QUALITY ANALYSIS

Verso Androscoggin previously submitted an ambient air quality analysis (NO₂ modeling in association with air emission license A-203-77-13-A, dated January 19, 2012; SO₂, PM₁₀, and CO modeling in association with air emission license A-203-71-E-R, dated September 3, 1996) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. An additional ambient air quality analysis is not required for this minor modification.

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-203-77-19-A, pursuant to the preconstruction licensing requirements of 06-096 CMR 115.

- (1) Verso Androscoggin is licensed to install and operate the upgrades included in the No. 2 Paper Machine Upgrades Project and associated equipment as described in its application and in the Findings of Fact of this NSR license.

This amendment warrants no new license conditions containing operational restrictions or emissions limitations. Verso Androscoggin shall continue to be subject to the standard and special conditions listed in their initial Part 70 License, A-203-70-A-I, and in all subsequent Part 70 license amendments and New Source Review licenses issued to this facility.

DONE AND DATED IN AUGUSTA, MAINE THIS 8th DAY OF February, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
PATRICIA W. AHO, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: January 10, 2013

Date of application acceptance: January 11, 2013

Date filed with the Board of Environmental Protection:

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

