



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**Verso Androscoggin LLC  
Franklin County  
Jay, Maine  
A-718-77-1-A**

**Departmental  
Findings of Fact and Order  
New Source Review  
NSR #1**

**FINDINGS OF FACT**

After review of the New Source Review (NSR) air emission 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 Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

FACILITY	Verso Androscoggin LLC
LICENSE TYPE	New Source Review License
NAICS CODE	221112
NATURE OF BUSINESS	Fossil Fuel Electric Power Generation
FACILITY LOCATION	Gate 15, Riley Road, Jay, Maine

Verso Androscoggin LLC (Verso Cogen) is a fossil fuel firing electric power generation facility which provides steam to the Verso Androscoggin LLC integrated pulp and paper mill in Jay, Maine, and electricity to the utility grid. The Cogen facility is located on Riley Road through Gate 15 of the pulp and paper mill property. The facility consists of three identical cogeneration trains, which include combustion turbines (CTs) and heat recovery steam generators (HRSGs). Natural gas is the primary fuel for the combustion turbines, and low sulfur distillate fuel oil with a maximum of 0.05% sulfur by weight is used as the secondary fuel. Emissions from the facility are formed from the combustion of natural gas and fuel oil in the three turbine generators and the combustion of natural gas only in the three heat recovery steam generator duct burners.

Verso Cogen has the potential to emit more than 100 tons per year (TPY) of particulate matter (PM), particulate matter under 10 micrometers in diameter (PM<sub>10</sub>), particulate matter under 2.5 micrometers in diameter (PM<sub>2.5</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and 100,000 tons of carbon dioxide equivalent (CO<sub>2</sub>e); therefore, the source is a major source for criteria pollutants. Verso Cogen has the potential to emit more than 10 TPY of a single hazardous air

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

Verso Cogen is an existing stationary source currently operating under the Part 70 license A-718-70-A-I issued July 30, 2003.

**B. New Source Review (NSR) License Description**

Verso Cogen has submitted an application to remove the restriction found in their initial Part 70 license which allows distillate oil firing in only two of the three combustion turbines concurrently. The facility proposes to remove the restriction to allow simultaneous distillate oil firing in all three combustion turbines, referred to in this NSR license as “the proposed project” or “the requested oil firing configuration.” Lifting the distillate oil firing restriction will provide the facility with operating flexibility in the event of possible natural gas curtailments. The need for this operating flexibility is driven by considerations of natural gas supply and grid stability recently raised by ISO – New England.

**C. Emission Equipment**

The following equipment is addressed in this air emission license:

Equipment	Maximum for Each Unit		Manuf. Date	Install. Date	Stack #
	Heat Input Capacity	Firing Rate, Fuel Type			
Combustion Turbine (CT) #1	675 MMBtu/hr each	661,764 scf/hr natural gas each (primary fuel)	1999	1999	1
CT #2		4927 gal/hr fuel oil each (0.05% sulfur* secondary fuel)			2
CT #3					3

\* Verso shall comply with the scheduled reduction of sulfur content in distillate fuel oil as specified in Maine statute.

**D. Application Classification**

The application for removal of the restriction prohibiting concurrent oil firing in all three combustion turbines does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or record keeping requirements. This application does not seek to modify a Best Available Control Technology (BACT) analysis performed per New Source Review.

A modification is identified as major or minor based on whether or not projected net emissions increases from the modification 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 Verso Cogen 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. Though the application requests changes to license restrictions for short-term and infrequent periods of operation, Verso Cogen has conservatively included an evaluation of annual emissions. Since the proposed modifications to the distillate oil firing limits will not impact the operations of the HRSG duct burners, only the combustion turbines are evaluated as part of this emissions inventory.

Baseline Actual Emissions

For an existing electric utility steam generating unit, baseline actual emissions are the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the five-year period immediately preceding the date a complete license application is received by the Department for a license required under 06-096 CMR 115, per 06-096 CMR 100(15)(A), and can be selected on a pollutant-by-pollutant basis. Verso Cogen has selected the following calendar years for the specified pollutants.

<b>Pollutant</b>	<b>Selected 24-Month Period</b>
PM, PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , Pb, H <sub>2</sub> SO <sub>4</sub> , and CO <sub>2e</sub>	2010 – 2011
CO and VOC	2011 – 2012

Projected Actual Emissions

When reviewed individually, the combustion turbines are not being physically modified as a result of the requested oil firing configuration, and their individual emission rates will not increase as a result of the requested license change. Each individual turbine is already permitted to fire either natural gas or distillate oil at its maximum short-term heat input capacity and is physically capable of doing so. The proposed license change only impacts the short-term emission rates of the cogen facility in total, affecting the licensed capabilities of only one turbine by allowing combustion of distillate oil concurrently with the other two turbines already licensed to fire distillate oil. To account only for those future emissions related to the requested oil firing configuration, the actual-to-projected-actual emissions inventory evaluates a single combustion turbine.

Since the requested oil firing configuration does not involve increases to the potential to emit (PTE) or design capacity of any of the combustion turbines, projected actual emissions are the maximum annual emissions anticipated to occur in the five-year period following completion of the proposed project. Projected actual emissions for a single combustion turbine are estimated based on the anticipated total heat input to the turbine applied to the same emission factors

used to estimate baseline actual emissions. The requested oil firing configuration is based on concurrent distillate oil firing in all three turbines during natural gas curtailments. Consequently, the projected actual emissions are conservatively based on two weeks of continuous distillate oil firing in one combustion turbine operating at its maximum heat input capacity.

The factors for PM<sub>10</sub> and PM<sub>2.5</sub> each consists of the filterable fraction plus the condensable fraction, in both the baseline actual and the projected actual emissions values.

Baseline Actuals-to-Projected Actuals Comparisons

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

<b>Pollutant</b>	<b>Baseline Actual Emissions (tons/year)</b>	<b>Projected Actual Emissions (tons/year)</b>	<b>Net Change (ton/year)</b>	<b>Significance Level (tons/year)</b>	<b>PSD Significant?</b>
PM	2.0	2.8	0.8	25	No
PM <sub>10</sub>	7.3	9.4	2.1	15	No
PM <sub>2.5</sub>	7.3	9.4	2.1	10	No
SO <sub>2</sub>	0.8	6.7	5.9	40	No
NO <sub>x</sub>	15.7	35.5	19.8	40	No
CO	16.3	26.0	9.7	100	No
VOC	6.3	2.6	-3.7	40	No
CO <sub>2e</sub>	134,517	162,799	28,282	75,000	No
Pb	1.52x10 <sup>-5</sup>	1.6x10 <sup>-3</sup>	1.6x10 <sup>-3</sup>	0.6	No
H <sub>2</sub> SO <sub>4</sub>	8.72x10 <sup>-3</sup>	0.9	0.9	7	No

Note: The above numbers are for one of the three Combustion Turbines only. None of the other equipment at the facility is affected by this NSR license.

Therefore, this amendment is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations* 06-096 CMR 115 (as amended). 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 issuance of this NSR 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 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 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Combustion Turbines #1, #2, and #3

Combustion Turbines (CT) #1, #2, and #3 are each Westinghouse Model number 251B12, dual fueled combustion turbines, each with eight burners firing pipeline natural gas as the primary fuel and low sulfur (0.05% or less, by weight) distillate fuel oil as secondary fuel. The maximum design heat input capacity of each CT is 675 MMBtu/hour. Each CT is coupled with a brush electric generator that produces 50 MW, variable with ambient conditions. The CT units were manufactured and installed in 1999.

Emissions from the CT units exhaust through three closely grouped stacks. Each of these three stacks has an inside diameter of 153 inches and a height of 212 feet above ground level (AGL).

C. New Source Performance Standards (NSPS)

NSPS 40 CFR Part 60, Subpart GG

The three combustion turbines are subject to the requirements of New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart GG – *Standards of Performance for Stationary Gas Turbines* for which construction is commenced after October 3, 1977. The proposed project will not change the short-term emission rates or licensed fuel firing capabilities of any individual combustion turbine. Therefore, the proposed project will not have an impact on Subpart GG applicability, and Verso Cogen shall continue to comply with these requirements as outlined in their Part 70 air emission license.

NSPS 40 CFR Part 60, Subpart KKKK

The requirements of NSPS 40 CFR Part 60, Subpart KKKK – *Standards of Performance for Stationary Combustion Turbines* apply to stationary combustion turbines with a maximum rated heat input capacity of greater than 10 MMBtu/hour which were installed, modified, or reconstructed after January 18, 2005. Removal of the simultaneous distillate oil firing restriction will not result in increased emission rates of any Subpart KKKK pollutant from any of the combustion turbines; therefore, the combustion turbines are not considered modified with respect to Subpart KKKK. There is no capital cost associated with the requested modification; therefore, the proposed project is not considered

reconstruction under the applicable definition per Subpart KKKK. Since the proposed project is neither a modification nor a reconstruction, the requirements of Subpart KKKK do not apply to Verso Cogen's combustion turbines.

D. National Emission Standards for Hazardous Air Pollutants (NESHAPs): 40 CFR Part 63, Subpart YYYY

Federal regulation 40 CFR Part 63, Subpart YYYY, *National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*, establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations. These units are considered existing stationary combustion turbines because construction was commenced on or before January 14, 2003 [§ 63.6090 (a)(1)]. Therefore, according to 40 CFR 63.6090(b)(4), Combustion Turbines #1, #2, and #3 are not subject to the requirements of Subpart YYYY or Subpart A. The units would only become subject to Subpart YYYY in the event they are reconstructed as defined in 40 CFR 63.2. The removal of the simultaneous oil firing restriction is not considered reconstruction under this Subpart.

E. 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 PSD-regulated pollutants. Since this calculation indicates the anticipated emissions increase 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 net emissions increase; thus, pre- and post-project recordkeeping and reporting requirements do not apply. Verso Cogen is not required to track future actual emissions from this project. [40 CFR Part 52, §52.21(r)(6)]

F. Compliance Assurance Monitoring (CAM)

Federal regulation 40 CFR Part 64, *Compliance Assurance Monitoring*, 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 turbines are equipped with advanced, Dry Low NO<sub>x</sub> burner technology to achieve low NO<sub>x</sub> emissions without the use of water injection when combusting natural gas. Water injection is used as NO<sub>x</sub> control during the combustion of low sulfur distillate oil, the water providing a heat sink that lowers the temperature, thereby reducing thermal NO<sub>x</sub> formation. Further emission reductions are obtained using a Selective Catalyst Reduction (SCR) and Aqueous

Ammonia injection grid during the combustion of natural gas only. The turbines are equipped with an oxidation catalyst for CO emissions control.

The original BACT determination for the combustion turbines required the installation and operation of several CEMS, including NO<sub>x</sub> and CO, on the exhaust from each of the Cogeneration Systems #1, #2, and #3 as BACT. [A-718-71-A-N (March 31, 1998)]

Federal regulation 40 CFR Part 64 §64.2(b)(1)(vi) specifies the exemption from specific CAM requirements for any emission unit subject to emission limitations or standards for which a Part 70 air emission license specifies a continuous compliance determination method. Since Verso Cogen's Part 70 license specifies as part of the original BACT determination the operation of a continuous emission monitoring system (CEMS) for the combustion turbines to continuously demonstrate compliance with the NO<sub>x</sub> and CO emission limits, CAM requirements do not apply to these units. [40 CFR Part 64 §64.2(b)(1)(vi)]

G. Reasonably Available Control Technology (RACT)

VOC RACT

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. The proposed project will not trigger VOC RACT requirements, since these combustion turbines are exempt from RACT as emission units that have implemented BACT requirements. [06-096 CMR 134, Section 1(C)(2)]

NO<sub>x</sub> RACT

*Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides (NO<sub>x</sub>-RACT)*, 06-096 CMR 138, contains provisions for control of NO<sub>x</sub> emissions from stationary sources with the potential to emit quantities of NO<sub>x</sub> equal to or greater than 100 tons/year, such as the Verso Cogen facility. The cogen facility falls under part (3)(H) of this chapter as a miscellaneous stationary source. NO<sub>x</sub> RACT requirements are satisfied at the Verso Cogen facility through the operation of a NO<sub>x</sub> CEMS on each cogeneration system and the use of dry low NO<sub>x</sub> burner technology, water injection, and selective catalyst reduction and aqueous ammonia injection, reducing NO<sub>x</sub> emissions to below 4.5 ppm on a 30-day rolling average basis. [06-096 CMR 138] The requested oil firing configuration will not affect the applicability or controls pertaining to NO<sub>x</sub> RACT, and Verso Cogen shall continue to comply with NO<sub>x</sub> RACT requirements as specified in their Part 70 license.

H. Acid Rain

The combustion turbines are subject to the Acid Rain Program regulations found in 40 CFR Parts 72, 73, 75, 77, and 78 because the facility was constructed after November 15, 1990, and greater than one-third of its potential electrical output capacity and greater than 219,000 MW-hours of electricity are sold to a utility. The proposed project does not impact Acid Rain regulations applicability for the combustion turbines, and the facility shall continue to comply with Acid Rain Program regulations.

I. Best Available Control Technology (BACT)

The BACT analysis for the requested fuel oil firing configuration was conducted according to a top-down approach to selecting air emission limits and controls considering economic, environmental, and energy impacts, in accordance with U.S. EPA Guidance and 06-096 CMR 115.

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 combustion turbines representative of the Verso Cogen units. The following is a summary of the BACT determination for the proposed project, by pollutant.

1. Particulate Matter (PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and lead)

The previous BACT analysis identified add-on controls of baghouses, electrostatic precipitators, and wet scrubbers, along with operating practices including the combustion of clean fuels and good combustion practices as technically feasible control technologies for emissions from the turbines. The add-on controls were eliminated from consideration based on the following:

- a. The add-on controls would create unacceptable back pressure, thus reducing power output and efficiency while increasing fuel usage.
- b. Combustion in a turbine requires a high level of excess air, resulting in large volumes of exhaust gas. This, in turn, increases the required size and corresponding costs of add-on controls, making them economically unjustifiable.
- c. The increased gas volume results in lower pollutant concentrations, which limits the amount of pollutant reductions achievable through the use of add-on control.



For this project, search of the RBLC identified no add-on control technologies to control particulate matter or lead for similar types of natural gas or distillate oil-fired combustion turbines.

The Department finds the continued use of natural gas and low sulfur distillate fuel oil and good combustion practices constitute BACT for emission of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and lead from the turbines at the Verso Cogen facility, including the currently licensed emission limits for these pollutants as follows:

<u>Pollutant</u>	<u>BACT Emission Limit</u>	
	<u>Firing Natural Gas</u>	<u>Firing Distillate Oil</u>
PM	6.27 lb/hr, 1-hour basis	24.21 lb/hr, 1-hour basis
PM <sub>10</sub>	6.27 lb/hr, 1-hour basis	24.21 lb/hr, 1-hour basis
PM <sub>2.5</sub>	6.27 lb/hr, 1-hour basis	24.21 lb/hr, 1-hour basis

2. SO<sub>2</sub>

The previous BACT analysis identified add-on controls and the combustion of low sulfur fuels as technically feasible control technologies for the turbines. Scrubbers were eliminated from consideration based on the following:

- a. The add-on control device would create unacceptable back pressure, thus reducing power output and efficiency while increasing fuel usage.
- b. The high exhaust gas volumes from a combustion turbine increase the size and corresponding costs of add-on control equipment, making them economically unjustifiable.
- c. The increased gas volumes result in lower pollutant concentrations, limiting the amount of pollutant reductions that can be achieved through a scrubber.
- d. Scrubbing of the emission gases would be effective for SO<sub>2</sub> control only during the firing of distillate oil, and distillate oil is fired in the turbines only as a secondary fuel.

The RBLC database provided no add-on controls identified for similar types of natural gas or distillate oil-fired combustion turbines.

The combustion of lower sulfur fuel is a feasible SO<sub>2</sub> emissions control method. The facility was originally licensed to fire distillate fuel oil with a maximum sulfur content of 0.05% by weight [A-718-71-A-N (March 31, 1998)]. Results of ambient air quality impacts analyses conducted in support of the project were submitted as part of the original air emission license application. Scenarios modeled as part of the analyses included the simultaneous firing of natural gas in one combustion turbine and No. 2 fuel oil in the other two combustion turbines, but did not specifically address impacts from all three combustion turbines firing distillate fuel oil concurrently.

The reduction of the fuel oil sulfur content from 0.05% by weight (500 ppm) to 0.0015% by weight (15 ppm) over the next five years, according to the requirements outlined in 38 MRSA §603-A(2)(A)(3), for the maximum fuel oil amount of 11,180,000 gallons/year as currently licensed, reduces the potential SO<sub>2</sub> annual emissions by less than 6 tons/year.

Prior to January 1, 2016, or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel oil with a maximum sulfur content of 0.05% by weight. Per 38 MRSA §603-A(2)(A)(3), beginning January 1, 2016, or on the date specified in the statute, the facility shall fire distillate fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm); and beginning January 1, 2018, or on the date specified in the statute, the facility shall fire distillate fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). The specific dates contained in this paragraph reflect the current dates in the statute as of the effective date of this license; however, if the statute is revised, the facility shall comply with the revised dates upon promulgation of the statute revision.

The Department finds the transition for the combustion of ultra-low sulfur distillate fuel oil as legislated in 38 MRSA §603-A(2)(A)(3) and the following emission limits constitute BACT for SO<sub>2</sub> emissions from Verso Cogen's combustion turbines during normal operation:

<b>Pollutant</b>	<b>BACT Emission Limit</b>	
	<b>Firing Natural Gas</b>	<b>Firing Distillate Oil (max. sulfur content of 0.05% by weight)</b>
SO <sub>2</sub>	1.35 lb/hr, 1-hour basis	32.38 lb/hr, 1-hour basis

3. NO<sub>x</sub>

The turbines are equipped with advanced, Dry Low NO<sub>x</sub> burner technology to achieve low NO<sub>x</sub> emissions without the use of water injection when combusting natural gas. Water injection is used as NO<sub>x</sub> control during the

combustion of kerosene, the water providing a heat sink that lowers the temperature, thereby reducing thermal NO<sub>x</sub> formation. Further emission reductions are obtained using a selective catalyst reduction (SCR) and aqueous ammonia injection grid during the combustion of natural gas. The combination of Dry Low-NO<sub>x</sub> burners and SCR reduce NO<sub>x</sub> emissions to below 4.5 ppm.

The SCR system is utilized to reduce NO<sub>x</sub> emissions from the combustion turbines during natural gas firing but not during oil firing.

Based on the RBLC search, add-on control technologies other than those currently utilized at the cogen facility to control NO<sub>x</sub> emissions were not identified for similar types of natural gas or distillate oil-fired combustion turbines.

The Department finds that the current add-on control technologies – dry low-NO<sub>x</sub> burners, water injection, and SCR – and the following emission limits during normal operation as contained in air emission license A-718-70-A-I (July 30, 2003) constitute BACT for NO<sub>x</sub> emissions from the turbines and duct burners at the facility:

<b>Pollutant</b>	<b>BACT Emission Limit</b>	
	<b>Firing Natural Gas</b>	<b>Firing Distillate Oil</b>
NO <sub>x</sub>	6.0 ppmvd @15% O <sub>2</sub> , 24-hour block average basis	42 ppmvd @15% O <sub>2</sub> , 3-hour block average basis
	4.5 ppmvd @15% O <sub>2</sub> , 30-day rolling average basis	
	24.37 lb/hr, 24-hour block average basis	133.25 lb/hr, 24-hour block average basis

4. CO

The facility currently utilizes catalytic oxidation and good combustion practices to control CO emissions. The oxidation catalyst carries a vendor-guaranteed removal efficiency of 85%. Search of the RBLC database identified no add-on control technologies other than those currently utilized at the Verso Cogen facility to control CO emissions from similar types of natural gas or distillate oil-fired combustion turbines.

The Department finds the current add-on control technology, which is use of an oxidation catalyst, constitutes BACT for CO emissions from the combustion turbines, including the currently licensed emission limits during normal operation as follows:

<u>Pollutant</u>	<u>BACT Emission Limit</u>	
	<u>Firing Natural Gas</u>	<u>Firing Distillate Oil</u>
CO	74.21 lb/hr, 24-hour block average basis	43.73 lb/hr, 24-hour block average basis

5. VOC

The previous BACT analysis identified add-on controls and operating practices such as good combustion practices as technically feasible control technologies for the turbines. Add-on controls excluding catalytic oxidation were eliminated from consideration based on the following:

- a. Thermal oxidation: Since the VOC concentration in the exhaust stream is low and is predominantly non-combusted methane and ethane, additional thermal treatment would not be effective.
- b. Adsorption: Carbon adsorption is not effective for low molecular weight compounds such as methane or ethane. Gas stream temperatures below 100°F and high VOC concentrations are most effectively treated by carbon adsorption. VOC concentrations in this exhaust stream are low, and the exhaust temperature is greater than 100°F, making carbon adsorption infeasible.
- c. Condensation: This control technique is usually used for gas streams that are saturated or nearly saturated with VOC; this is not the case with the emission streams from these combustion turbines. Moreover, the energy required to increase the pressure and/or decrease temperatures sufficiently to reach saturation make condensation infeasible.

The RBLC database provided no add-on controls identified for similar types of natural gas or distillate oil-fired combustion turbines.

The Department finds the use of catalytic oxidation and good combustion practices constitute BACT for VOC emissions from the turbines at Verso Cogen, including the currently licensed emission limits for conditions of normal operation as follows:

<u>Pollutant</u>	<u>BACT Emission Limit</u>	
	<u>Firing Natural Gas</u>	<u>Firing Distillate Oil</u>
VOC	2.13 lb/hr, 1-hour basis	8.0 lb/hr, 1-hour basis

6. Sulfuric Acid Mist (SAM)

Emissions of SAM are formed in the ductwork downstream of the turbine and HRSG by the combination of water vapor and sulfur trioxide (SO<sub>3</sub>), both of

which are products of the combustion process. Since SO<sub>3</sub> emissions and ultimately SAM emissions are inherently related to SO<sub>2</sub> emissions, the technologies to control SO<sub>2</sub> emissions are applicable for the control of SAM emissions. A search of the RBLC database identified no add-on control technologies to reduce SAM emissions from similar types of natural gas or distillate oil-fired combustion turbines.

The Department finds the combustion of ultra-low sulfur distillate fuel oil and the following emission limits constitute BACT for SAM emissions from the combustion turbines at the Verso Cogen facility:

<u>Pollutant</u>	<u>Combustion Turbine BACT Emission Limit</u>	
	<u>Firing Natural Gas</u>	<u>Firing Distillate Oil</u>
Sulfuric Acid Mist (SAM)	0.19 lb/hr, 1-hour basis	7.75 lb/hr, 1-hour basis

7. Greenhouse Gases (GHG)

As defined in 06-096 CMR 100 (as amended), GHGs are a regulated pollutant, except that for the purposes of 06-096 CMR 115 and 06-096 CMR 140, the aggregate group of gases known as greenhouse gases are regulated pollutants only for the purposes of major New Source Review involving significant emissions of GHGs and Part 70 major source requirements. [06-096 CMR 100 (148)(H)] Thus, GHGs are not subject to BACT requirements for the purposes of this project.

J. Incorporation into the Part 70 Air Emission License

Per *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended), Section 1(C)(8), for a modification that has undergone NSR requirements or been processed through 06-096 CMR 115, the source must apply for an amendment to the Part 70 license within one year of commencing the proposed operations as provided in 40 CFR Part 70.5. However, since the licensing of this proposed operating scenario is in direct contradiction to Specific Condition (15)(A)(2) of the facility's Part 70 license, the facility may only commence the proposed operating scenario once this NSR license has been issued and the Part 70 license has been amended.

K. Annual Emissions

The proposed project will not change the fuel use limits for the facility and thus will not change total allowable annual emissions from the facility.

### III. AMBIENT AIR QUALITY ANALYSIS

Verso Cogen 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. Based on the results of the previously submitted ambient air quality analysis combined with the transition to ultra-low sulfur distillate fuel oil as auxiliary fuel in the combustion turbines, the Department finds that an additional ambient air quality analysis is not required for this NSR license.

### ORDER

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

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

The Department hereby grants Air Emission License A-718-77-1-A pursuant to the preconstruction licensing requirements of 06-096 CMR 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.

### SPECIFIC CONDITIONS

- (1) Turbines #1, #2, and #3

Upon issuance of this NSR license and amendment of the facility's Part 70 air emission license to remove the operating restriction specified in Condition (15)(A)(2) of license A-718-70-A-I (July 30, 2003), Combustion Turbines #1, #2, and #3 shall be licensed to fire any combination of natural gas or fuel oil in the three units, including the continuous firing of fuel oil in all three units simultaneously. [06-096 CMR 115, BACT]

- (2) The fuel oil sulfur content for use in the turbines shall transition to ultra-low sulfur as described below:

- A. Prior to January 1, 2016, the distillate fuel oil fired at the facility shall be ASTM D396 compliant (maximum sulfur content of 0.05% by weight). [06-096 CMR 115, BACT]
  - B. Beginning January 1, 2016, distillate fuel oil fired at the facility shall have a maximum sulfur content limit of 0.005% by weight (50 ppm) or as specified in the statute 38 MRSA §603-A(2)(A)(3). [38 MRSA §603-A(2)(A)(3)]
  - C. Beginning January 1, 2018, distillate fuel oil fired at the facility shall have a maximum sulfur content limit of 0.0015% by weight (15 ppm) or as specified in the statute 38 MRSA §603-A(2)(A)(3). [38 MRSA §603-A(2)(A)(3)]
  - D. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and percent sulfur of the fuel delivered. Records of fuel use shall be kept on both a monthly and a 12-month rolling total basis. [06-096 CMR 115, BACT]
  - E. To comply with this condition, distillate fuel oil purchased for use in the combustion turbines shall have a sulfur content not to exceed by percentage by weight as outline above, as applicable on the date of purchase.
- (3) Emissions from the Cogeneration Systems #1, #2, and #3 shall not exceed the following, except during startup, shutdown, turbine tuning, or fuel transfer operating scenarios.

<u>Pollutant</u>	<u>Combustion Turbine BACT Emission Limit</u>	
	<u>Firing Natural Gas</u>	<u>Firing Distillate Oil</u>
PM	6.27 lb/hr, 1-hour basis	24.21 lb/hr, 1-hour basis
PM <sub>10</sub>	6.27 lb/hr, 1-hour basis	24.21 lb/hr, 1-hour basis
PM <sub>2.5</sub>	6.27 lb/hr, 1-hour basis	24.21 lb/hr, 1-hour basis
SO <sub>2</sub>	1.35 lb/hr, 1-hour basis	32.38 lb/hr, 1-hour basis
NO <sub>x</sub>	6 ppmvd @ 15% O <sub>2</sub> , 24-hour block average; 4.5 ppmvd @ 15% O <sub>2</sub> , 30-day rolling average	42 ppmvd @ 15% O <sub>2</sub> , 3-hour block average
	24.37 lb/hr, 24-hour block average basis	133.25 lb/hr, 24-hour block average basis
CO	74.21 lb/hr, 24-hour block average basis	43.73 lb/hr, 24-hour block average basis
VOC	2.13 lb/hr, 1-hour basis	8.0 lb/hr, 1-hour basis
Sulfuric Acid Mist (SAM)	0.19 lb/hr, 1-hour basis	7.75 lb/hr, 1-hour basis

\* 1-hr basis means compliance is demonstrated by the average of three 1-hour compliance emissions test runs upon the request of the Department to conduct emissions testing.

[06-096 CMR 115, BACT]

Verso Androscoggin LLC  
Franklin County  
Jay, Maine  
A-718-77-1-A

16

Departmental  
Findings of Fact and Order  
New Source Review  
NSR #1

- (4) Per *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended), Section 1(C)(8), for a modification that has undergone NSR requirements or been processed through 06-096 CMR 115, the source must apply for an amendment to the Part 70 license within one year of commencing the proposed operations as provided in 40 CFR Part 70.5. However, since the licensing of this proposed operating scenario is in direct contradiction to Specific Condition (15)(A)(2) of the facility's Part 70 license, the facility may only commence the proposed operating scenario once this NSR license has been issued and the Part 70 license has been amended. [06-096 CMR 140, Section 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF May, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Mauro Allen Robert Conner for  
PATRICIA W. AHO, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 19, 2013

Date of application acceptance: March 20, 2013

Date filed with the Board of Environmental Protection:

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

