



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

**Verso Bucksport, LLC
Hancock County
Bucksport, Maine
A-22-70-H-A**

**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Amendment #5**

After review of the Part 70 Minor License Modification 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, §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Facility	Verso Bucksport, LLC (Verso Bucksport)
License Amendment Type	Part 70 Minor Modification
NAICS Code	322121 (pulp mill that produces paper)
Nature of Business	Groundwood and thermomechanical pulp; papermaking
Facility Location	2 River Road, Bucksport, Maine

Verso Bucksport LLC (Verso Bucksport) operates a pulp and paper mill and is licensed as a major source through its Part 70 Air Emission License (A-22-70-A-I, December 30, 2004).

Verso Bucksport submitted a Part 70 Minor Modification application to address an alternative sulfur dioxide (SO₂) compliance demonstration method for Boiler 8. Currently, Boiler 8 has a continuous emission monitor (CEM) requirement for SO₂; however the allowable fuels fired in the unit were revised through a New Source Review amendment (A-22-77-4-A, November 29, 2010) such that the firing of coal and tires no longer occurs. As allowed in *Standards of Performance for Fossil-Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971*, 40 CFR Part 60, Subpart D, compliance with SO₂ emissions may be demonstrated by fuel sampling and analysis for the remaining licensed fuels. Verso Bucksport will continue to monitor SO₂ emissions from Boiler 8, but will use the alternative compliance methods.

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(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
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PORTLAND
312 CANCO ROAD
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PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
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B. Emission Equipment

The emission unit addressed in this amendment is Boiler 8 (814 MMBtu/hr). The licensed allowed fuels include biomass (including wood waste, wood chips, bark, paper mill sludge, waste papers, and fiber core ends), fuel oil (specified waste oil, off-specification waste oil, and fuel oil), and natural gas.

C. Application Classification

A Part 70 Minor License Modification is for a license change that meets the following criteria:

- Does not violate any Applicable requirement;
- Does not involve a Part 70 Significant License Modification to existing monitoring, reporting, or recordkeeping requirements in the license;
- Does not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impact or a visibility or increment analysis;
- Does not seek to establish or change a Part 70 license term or condition for which there is no corresponding underlying Applicable requirement, and that the source has assumed to avoid an Applicable requirement to which the source would otherwise be subject. Such terms and conditions include: A federally enforceable emissions cap assumed to avoid classification as a Title I modification or a modification or reconstruction under any provision of Section 111, or 112 of the Clean Air Act (CAA); and an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the CAA;
- Is not a Title I modification or a modification or reconstruction under any provision of Section 111 or 112 of the CAA, and
- Is not required by the Department to be processed under Part 70 Significant License Modification procedures.

The request to use an alternative compliance demonstration to the SO₂ CEM is not a Part 70 Significant License Modification or equipment 'modification' as defined in 06-096 CMR 100 (as amended). The change in monitoring is not considered significant since the facility will continue to demonstrate SO₂ compliance with the allowable methods in 40 CFR Part 60, Subpart D. The fuels requiring a CEM (coal and tires) are no longer licensed for Boiler 8. No equipment modification of Boiler 8 will be occurring by switching to an alternative compliance demonstration.

The facility's request is classified as a Part 70 Minor License Modification and has been processed under *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended).

In addition to this Part 70 Minor License Modification, Verso Bucksport has also requested a separate Minor Revision licensing action through 06-096 CMR 115 to adjust the Boiler 8 SO₂ compliance demonstration requirement in the New Source Review license amendment A-22-77-4-A from a CEM to fuel sampling and analysis.

II. PART 70 MINOR LICENSE MODIFICATION

Boiler 8 is an 814 MMBtu/hr multi-fuel boiler subject to 40 CFR Part 60, Subpart D. Verso Bucksport has requested a revision to the currently licensed SO₂ compliance demonstration, as allowed through 40 CFR Part 60, Subpart D due to changes to the types of fuels licensed for the boiler made in the New Source Review biomass project amendment.

As written, the current Part 70 air emission license allows the firing of fuel oil, natural gas, tire derived fuel, biomass, and coal and includes SO₂ limits of 0.8 lb/MMBtu (when firing oil, natural gas or a combination of natural gas, oil, tire derived fuel (TDF) or biomass (no coal)) and 1.2 lb/MMBtu (when firing coal or a combination of coal, TDF and biomass). Verso Bucksport was issued a New Source Review amendment, A-22-77-4-A, to increase the biomass capacity of the boiler. In that licensing action, the allowance of coal and tires as fuels was removed.

1. SO₂ Compliance Demonstration Methods

The current Part 70 air emission license requires an SO₂ CEM to be used to demonstrate compliance with the SO₂ lb/MMBtu limits.

Condition 15(K) in air emission license A-22-70-A-I states:

15(K) 'Compliance with the SO₂ lb/MMBtu emission limits for boiler 8 shall be on a 3-hr rolling average, demonstrated by an SO₂ CEMS. [40 CFR Part 60.45]. International Paper shall maintain the SO₂ CEMS in accordance with Chapter 117, and 40 CFR Part 60, Section 60.45. [MEDEP Chapter 117 and 40 CFR §60.45]'

Verso Bucksport has submitted a request to use the alternative SO₂ compliance demonstration allowed in 40 CFR Part 60, Sections 60.45(b)(1) and (2). The following is the federal language, emphasis added:

§60.45 Emissions and Fuel Monitoring

- (a) Each owner or operator of an affected facility subject to the applicable emissions standard shall install, calibrate, maintain, and operate continuous opacity monitoring system (COMS) for measuring opacity and a continuous emissions monitoring system (CEMS) for measuring SO₂ emissions, NO_x emissions, and either oxygen (O₂) or carbon dioxide (CO₂) *except as provided in paragraph (b) of this section.*

- (b) Certain of the CEMS and COMS requirements under paragraph (a) of this section do not apply to owners or operators under the following conditions:
- (1) For a fossil-fuel-fired steam generator that combusts only *gaseous* or liquid fossil fuel (excluding residual oil) with potential SO₂ emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and that does not use post-combustion technology to reduce emissions of SO₂ or PM, COMS for measuring the opacity of emissions and CEMS for measuring SO₂ emissions are not required if the owner or operator monitors SO₂ emissions by fuel sampling and analysis or fuel receipts.
 - (2) For a fossil-fuel-fired steam generator that does not use a flue gas desulfurization device, a CEMS for measuring SO₂ emissions is not required if the owner or operator monitors SO₂ emissions by fuel sampling and analysis.

The natural gas fired at Verso Bucksport is pipeline quality which calculates to 0.00135 lb/MMBtu SO₂. The gas turbine at the facility is subject to 40 CFR Part 75 which includes a requirement to annually perform a fuel analysis on the natural gas. The results of the natural gas fuel analyses have ranged from 0.000135 to 0.00097 lb/MMBtu, which is well below the 0.06 lb/MMBtu in the 40 CFR Part 60, Section 60.45(b)(1) monitoring exemption.

The fuel oil fired in Boiler 8 has a maximum sulfur content limit of 0.7%. This sulfur content limit ensures compliance with the 0.8 lb/MMBtu SO₂ emission standard in 40 CFR Part 60, Subpart D and meets the requirements of the 40 CFR Part 60, Section 60.45(b)(2) monitoring exemption.

In addition to fuel oil and natural gas, Verso Bucksport fires biomass, including wood waste, wood chips, bark, paper mill sludge, waste papers, and fiber core ends, in Boiler 8. In support of the removal of the SO₂ CEM requirement, Verso Bucksport submitted data on the sulfur content of non-sludge biomass and sludge biomass. Past fuel sampling for required particulate matter stack testing and in-house sampling from various years from 1994 – 2012 shows the non-sludge biomass sulfur content ranged from 0.01% to 0.05% and the sludge biomass sulfur content ranged from 0.08% to 0.47%.

**% Sulfur in Non-Sludge Biomass and Sludge Biomass Based on Ultimate Analyses
 (years in 1994-2012)**

	1994	1995	1996	1997	1998	1999	2000	2002	2004	2006	2007	2008	2011	2012	Ave
Non-Sludge Biomass % sulfur	0.02	0.02	0.05	0.02	0.03	0.02	0.01	0.05	0.02	0.03	0.05	0.02	0.01	0.01	0.03
Sludge Biomass % sulfur	0.09	0.21	0.33	0.19	0.47	0.09	0.16	0.12	0.09	0.15	-	0.18	0.17	0.08	0.18

A conservative estimate is a firing rate ratio of 90% non-sludge biomass and 10% sludge biomass, resulting in calculated SO₂ emissions of 0.1 - 0.2 lb/MMBtu. The actual firing ratio is more likely to be 95% non-sludge biomass and 5% sludge biomass, based on higher suspension firing and an ongoing effort to reduce sewer losses. These estimated calculated emissions were found to be higher than actual emissions. A review of the CEM data for SO₂ while firing natural gas, oil, and/or biomass (no coal or tires) in the June through October 2012 timeframe shows the majority of CEM hourly readings were 0.0 lb/MMBtu for SO₂, with no hourly readings above 0.1 lb/MMBtu. Monthly SO₂ averages ranged from 0.01 to 0.04 lb/MMBtu.

Based on low SO₂ emissions occurring from firing the main fuel mix of biomass in Boiler 8, the 40 CFR Part 60, Subpart D, Section 60.45(b)(1) SO₂ CEM exemption when firing natural gas, and the 40 CFR Part 60, Subpart D, Section 60.45(b)(2) SO₂ CEM exemption when documenting fuel oil sulfur content; the Department shall reword condition 15(K) to state that the SO₂ limit from Boiler 8 will be demonstrated by fuel sampling and analysis rather than by use of an SO₂ CEM. As a result of the different compliance method, the 3 hour average basis for the lb/MMBtu limit will be removed.

Condition 15(P) shall be reworded to include the fuel sampling and analysis requirements. The sampling for non-sludge biomass and sludge biomass sulfur content shall be performed during particulate matter testing required by the air emission license, the pipeline natural gas sulfur content shall be obtained annually per the 40 CFR Part 75 requirements for the gas turbine, and the fuel oil sulfur content documentation shall be obtained through the supplier analysis per delivery batch. Condition 15(P) already includes the requirement for fuel oil sulfur content. The requirements for biomass and natural gas shall be added.

2. Revision of Fuel Language

This amendment will also align the allowable fuels in Boiler #8 with New Source Review amendment A-22-77-4-A so the alternative monitoring can be used. The

following changes shall be made to conditions 15(A), 15(B), and 15(C), and 15(F) in A-22-70-A-I.

Condition (15)

- A. ~~International Paper~~ Verso Bucksport is licensed to fire the following fuels in boiler 8 (814 MMBtu/hr): fuel oil (including fuel oil, off-specification waste oil, and specification waste oil), natural gas, ~~tire derived fuel (TDF)~~, biomass (including wood waste, wood chips, bark, mill waste treatment sludge, paper roll core ends, and waste papers), ~~and coal~~. The fuel oil sulfur content shall not exceed 0.7% by weight, demonstrated through record keeping. [MEDEP Chapter 140, BPT] **Enforceable by State only**
- B. The TDF fired in boiler 8 shall have properties similar to the TDF that was used in the initial test burns (i.e. approximately 98% of the bead wire removed and approximately 70% of the belt wire removed) unless emission testing shows that the emission limits can be met while burning TDF with greater amounts of wire present. Records shall be maintained for a minimum of six (6) years documenting the names of International Paper's TDF suppliers and their locations. [MEDEP Chapter 140, BPT] **Enforceable by State only**
- C. TDF shall not be charged to boiler 8 at a rate that exceeds 3.5 ton/hr on a monthly average unless emission testing approved by the Department demonstrates compliance with the boiler emission limits at greater TDF firing rates. [MEDEP Chapter 140, BPT] **Enforceable by State only**
- F. [only SO₂ lb/MMBtu language shown]
Emissions from Boiler 8 shall not exceed the following:

	lb/MMBtu	Origin and Authority
SO ₂	0.80 ^a (3-hr rolling ave)	40 CFR §60.43
	1.2 ^b (3-hr rolling ave)	40 CFR §60.43

^a 0.80 lb SO₂/MMBtu applies when firing oil, natural gas or a combination of natural gas, oil, TDF or biomass (no coal).

^b ~~1.2 lb SO₂/MMBtu applies when firing coal or a combination of coal, TDF and biomass. When coal and oil are being fired simultaneously, the applicable SO₂ emission standards shall be determined by prorating using the formulas in 40 CFR Part 60.43(b).~~

ORDER

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

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

The Department hereby grants Air Emission License A-22-70-H-A, subject to the statements and conditions found in Air Emission License A-22-70-A-I, amendments A-22-70-C-A, A-22-70-E-A, A-22-70-F-A, and A-22-70-G-A, and the following conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in 06-096 CMR 115 for making such changes and pursuant to the applicable requirements in 06-096 CMR 140.

For each standard and special condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only**.

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.

SPECIAL CONDITIONS

The following shall replace Conditions 15(A), 15(K), and 15(P) in Air Emission License A-22-70-A-I:

(15) Boiler 8 (Multi-fuel boiler)

- A. Verso Bucksport is licensed to fire the following fuels in Boiler 8 (814 MMBtu/hr): fuel oil (including fuel oil, off-specification waste oil, and specification waste oil), natural gas, and biomass (including wood waste, wood chips, bark, mill waste treatment sludge, paper roll core ends, and waste papers). The fuel oil sulfur content shall not exceed 0.7% by weight, demonstrated through record keeping. [06-096 CMR 140, BPT]

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- K. Compliance with the SO₂ lb/MMBtu emission limits for Boiler 8 shall be demonstrated by fuel sampling and analysis requirements as set forth in the Boiler 8 periodic monitoring requirements under Condition 15(P). [40 CFR Part 60.45].

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P. Boiler 8 Periodic Monitoring

1. Verso Bucksport shall maintain monthly records of the fuel use for Boiler 8. The fuel oil use records shall include sulfur content, demonstrated by fuel analysis (es) from the supplier for each delivery. The waste oil use records may be on a monthly mill total basis and not a per boiler basis.
2. Verso Bucksport shall keep records of the results of the analysis(es) of representative waste oil sample(s) and shall test representative samples annually or more frequently if changes occur in the process that may affect the composition of the waste oil collected. The results of the analyses shall be kept on-site.
3. Verso Bucksport shall maintain a log of the ESP secondary T/R voltage and current meter reading and record the voltage and current meter reading once per day. The periodic monitoring in this license relating to the Boiler 8 ESP will be superceded by the continuous monitoring system requirements of 40 CFR Part 63, Subpart DDDDD once the CMS is approved.
4. Verso Bucksport shall maintain a log detailing all routine and non-routine maintenance on the ESP. Verso Bucksport shall keep a log documenting the date and nature of all ESP failures.
5. Verso Bucksport shall keep a log(s) and maintain the Boiler 8 multiclones according to the plan previously submitted to the Department.
6. Verso Bucksport shall perform an analysis to document non-sludge biomass and sludge biomass sulfur content during particulate matter testing required by the air emission license.
7. Verso Bucksport shall document the pipeline natural gas sulfur content per the 40 CFR Part 75 requirements for the gas turbine.

[06-096 CMR 140, BPT]

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Hancock County
Bucksport, Maine
A-22-70-H-A

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**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Amendment #5**

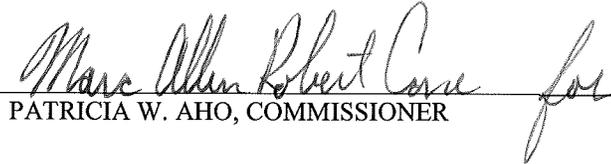
Conditions 15(B) and 15(C), addressing tire derived fuel, shall be deleted from Air Emission License A-22-70-A-I.

The SO₂ 1.2 lb/MMBtu limit when firing coal or a combination of coal, TDF, and biomass shall be deleted from Condition 15(F) in Air Emission License A-22-70-A-I.

DONE AND DATED IN AUGUSTA, MAINE THIS 1 DAY OF May, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:


PATRICIA W. AHO, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-22-70-A-I.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: October 25, 2012

Date of application acceptance: October 26, 2012

Date filed with the Board of Environmental Protection:

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.

